

MOTOR AGE

Vol. IV. No. 25

DECEMBER 17, 1903

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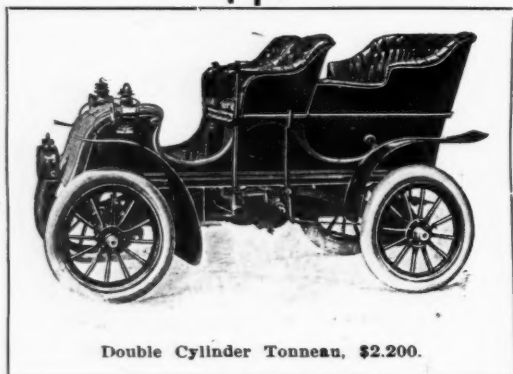
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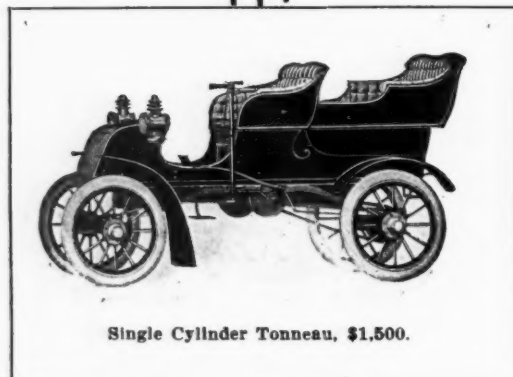
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MOTOR AGE

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\$2.00 Per Year.

AUTOMOBILING IN FROZEN LANDS

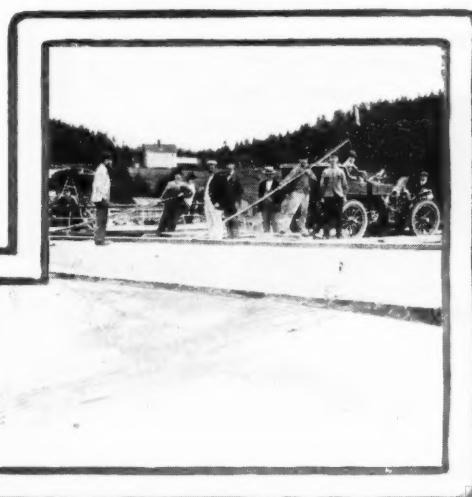
THE real charm of motoring is not to be found in racing or in fast driving, but in touring, and especially in foreign countries, where one meets with experiences novel, interesting and to say the least at times exciting. The driving of high-powered motors, under absolute control of the operator, up and down great mountain passes, over roads winding and twisting in every conceivable direction, passing through valleys and canyons surmounted by white capped mountains, along the banks of rushing torrents, and penetrating into unexplored regions, right to the very heart of the arctic circle, possesses charms lacking in the every day tour of one's native land, even though that land possess a far famed Yellowstone park.

Such trips as these have in the past appealed most strongly to Charles J. Glidden, of Boston, who for three successive years has made tours of record mileage through modern and ancient Europe, and whose latest achievement was a drive to the arctic circle, his being the first machine to reach that distant point. So pleased with his latest trip is Mr. Glidden that when a MOTOR AGE representative recently called upon him he was found to be surrounded by maps of this, that and the other country, together with one big one of the world. Mr. Glidden would not even hint at what he was devising in the way of his next trip, but judging from lines traced on the map of the world it need not be surprising if he makes an effort to encompass the globe in an automobile.

In the trip to the arctic region Mr. Glidden, who was accompanied by his wife, drove 13,795

miles, and toured in Austria, Bavaria, Belgium, Bohemia, Denmark, England, France, Germany, Holland, Ireland, Sweden, Switzerland and Wales. It was truly a tour through the countries of the old world; a tour fraught with the greatest of interest, and demonstrative to say the least of the fact that the automobile

At the Arctic Circle



Crossing a Norwegian River

only a half hour's delay on account of a slight mechanical disarrangement and six tire troubles, a record of which one may justly be proud.

All last winter Mr. Glidden was busy mapping out his route, determining upon the same from the best obtainable information. Even then, however, conditions arose which necessitated a change in his plan, such for instance as the enforcement of unusual restrictions in Norway, so that the trip to the circle had to be made through Sweden. This change, however, was most advantageous, as it enabled the tourists to reach a further point north than was possible by the Norway route.

The trip was started from Boston June 16, and upon arriving at Liverpool Mr. Glidden found his new Napier awaiting his pleasure. This car had been especially constructed for the trip, being large and roomy, having ample room for five passengers, a small steamer trunk, three hand bags and 140 pieces of extra parts, including nuts, bolts, tools, extra tires and inner tubes. A change of clothing was carried, and at times it was found advisable to change from summer to winter clothing; as well as a complete outfit of rubber clothing, the latter of which was found serviceable in 77 hours of rain, and almost as many of mud.

Without stopping in Liverpool the party started for Birkenhead and there and then came the first touring through Wales, which was accomplished in 7 hours, the distance covered being 125 miles. At Holyhead the machine was shipped on a boat for Dublin, and



MOTOR AGE

A Road in Finland

has passed beyond the experimental stage, and is as reliable as a means of transportation as that old friend of mankind—the horse—or, still better, fully the equal of the ponderous steam propelled monsters that travel on roads of steel. In all this long trip through countries virtually unknown to the motorist, the car was driven in all sorts of weather, experiencing



In Haparanda



Enroute to Stockholm



MOTOR AGE

Along the Coast of Bothnia



Leaving Stockholm

then came the ride through Ireland, with ample opportunity to study the roads and the people. After witnessing the Gordon Bennett race, the two weeks' carnival at Phoenix park, both of which were magnificent spectacles, and of which the automobile world is already informed, the tourists made the trip through Ireland from Dublin to Portrush, the Giant's Causeway, Newcastle, back to Dublin, into the Wicklow mountains, Waterford, Cork, Glengariff and Waterville to the Lakes of Killarney, Muckross Abbey, Ross Castle, Limerick and back to Dublin, in all a ride of 1,510 miles.

Irish roads on the whole were found to be good, no inconvenience being experienced. What pleased the tourists most, however, was the cordial reception given them by the natives, who seemed delighted with the invasion of the automobilists, even though at times it caused dire results among the drivers of horses. The country was as picturesque as it has been pictured, while its traditions and romances are ever a delight to the tourists or the student. Rich in historic places, overflowing with keen wit and humor, possessing the most hospitable of hosts, and proud in the possession of its roads, the tourists were rather sorry when the time came to recross the Irish sea from Dublin to Holyhead.

From Holyhead the party skirted the base of Mount Snowden, the highest peak in Great Britain, passed around Great Ormes head on the coast of Wales and then following the coast line to Chester, crossed the backbone of England over noted grouse moors to Halifax, thence through the manufacturing districts of the midlands to Hull, and shipped aboard a steamer for a three days' sail to Copenhagen.

The first of a series of troubles with customs officials was encountered in Copenhagen, but eventually verbal consent to drive in Denmark was given by the chief of police. In company with the American consul a drive of 118 miles northward over perfectly level and excellent roads, through a continuous system of heavily wooded parks, was enjoyed. The trip ended near the grounds surrounding the magnificent castles of the king at Fredericksborg and Fredensborg, on the roads near which automobile driving is forbidden. Unwittingly, however, Mr. Glidden drove about 50 feet upon one of these roads and is now in possession of a document for which he paid \$5 announcing this fact. The trip was continued to Elsinor, where the tomb of Shakespeare's Hamlet is located. The city is defended by the castle of Kronborg, which stands on a projecting spit of land and commands the sound, at this point only 2½ miles wide. It was across this sound to Helsingborg that the car was shipped.

One thousand five hundred and forty miles away almost due north lay the arctic circle,

the objective point of these Americans who so far had progressed most satisfactorily. Here, however, obstacle after obstacle was encountered. The governors provided that if the trip to the arctic circle should be made through Norway the route should be advertised in the newspapers six days prior to the trip, and at all times the car should be preceded by a man on horseback to warn the inhabitants of the approach of the fearful death-dealing monster, and so Sweden was resorted to as the land through which the circle should be reached.

After considerable delay and the liberal use of the telegraph wires, Mr. Glidden secured from the authorities at Stockholm a special license to operate the machine in Sweden, the only restrictions imposed being that he should stop on signal from drivers of horse-drawn vehicles, and should be responsible for any damages caused by fast driving. This was better than had been expected, and upon depositing a sum equal to \$608, which was recovered upon leaving the country, the journey for the interior was renewed. This was on the morning of July 31, not before gasoline had been shipped by steamer to various points on the road.

The first day out rain, mud and badly rutted

A Ruin in Ireland



MOTOR AGE

On the Coast of Wales

roads were the lot of the tourists, who fell short of gasoline about a dozen miles from a railroad station, this causing a delay of 6 hours. The road north of the capital city lay for 900 miles through the woods skirting the gulf of Bothnia, the going being poor and possessing steep and dangerous grades. The roads between stations were bereft of all humanity, but in the villages crowds always gathered to greet the adventurous party, whose coming had been told by telegraph and telephone, so that schools and places of business were suspended to permit the natives to inspect this great monster. In the country districts the children and even their elders were frightened upon the approach of the car, and would run away into the woods or anywhere to escape. The traffic near the towns was large and delays on account of stops for fractious horses were most numerous. In many cases the tourists had to disembark, blindfold the horse, and then lead both the equine and its driver by the machine, so thoroughly frightened were both. Often wagons were abandoned in the roads, but notwithstanding these excitements everybody took the situation pleasantly, and soon became interested in the mechanism of the car, and many intelligent questions were propounded. Although this was the first automobile that had been seen in this section the residents thereof had heard of the horseless carriage, and in many instances the tourists were asked if that was one of the machines that had killed so many persons in Paris.

Perhaps the most interesting story told by Mr. Glidden in connection with his trip is that relating to a Finnish woman. She was plodding along at a pace not exceeding a half mile per hour, when overtaken by the car. When asked where she was going she said to visit her daughter, who lived twelve miles away, and she expected to arrive there the following morning. Mr. Glidden took her in the tonneau, wrapped her in warm clothing, and within a short time landed her at her daughter's residence. So surprised was the Finnish woman at this that for a considerable length of time she could not express herself. Finally she did say, "God was good to put you in my way." Then she said she was dying for a smoke, and a few minutes later as the car drove away she waved adieu behind the smoke arising from a large wooden pipe. Many times natives were taken aboard the car and given a "lift" on their way, while in several of the towns school children were loaded aboard and taken for short trips. Many of them were frightened, but most of them enjoyed the novel experience, and did not want to get out of the car at all.

The Norrland cities of Sweden were found to be most interesting. Many of them were

old and had been rebuilt after extensive plans with parks and boulevards, but the majority of them still retain the buildings and characteristics of olden days. The party in due season arrived at Haparanda, 60 miles distant from any railroad, and the most northern town in Sweden. The residents of this place depend wholly for transportation on the boats for 6 months in the year, and during the other 6 months use sledges, as from 6 to 10 feet of snow may be found on the ground from November to May.

It was on the morning of August 16 that the party left Haparanda for its dash to the circle, the route being over what might be termed a reindeer path to a point 75 miles northward on the east bank of the River Tornea. On the road few persons were passed, while in the settlements the population had turned out to witness the coming, and many had traveled all night in order to secure a view of the Americans and their car. At Martarengi, 15 miles from the circle, Mr. Glidden took the postmaster of Upper Tornea aboard and with him continued to the arctic circle, where Mrs. Glidden presented the American flag to Mr. Martinell.

The return to Haparanda was made that day, and after three days' rest in that city the party embarked on steamer for Gotenborg, a more southern city of Sweden, and across the Skattegat to Fredrickshavn, the most northerly city of Denmark. From this point they drove direct to Germany, passing through the heart of Denmark, amidst well cultivated fields and along level macadamized roads. Then came the ride through Bohemia, Austria, Bavaria, Switzerland, Germany to Paris, and the boat to London, where in due season the party started for home across the great herring pond, after having covered 13,795 miles in 119 days, well satisfied with the pleasure gained and duty performed.

MOTOR ROAD TO MT. HOOD

Portland, Ore., Dec. 8.—Some of the motorists of this city are talking of building a private automobile course to Mt. Hood. John B. Kelly, of this city, has ascended for 8,000 feet the precipitous side of the mountain, and not long since went within 2,000 feet of the snow line. He made the trip in a White steam stanhope, leaving Portland at 11 o'clock in the morning and arriving at his destination in 5

Berlin Market Place



MOTOR AGE

Street in Berlin

hours' running time. The grade was steep and often the wheels were up to the hub in mud. Kelly followed the trail traveled by saddle horses, and occasionally by teams. The present plan contemplates building the road up the mountain off the public highway. It is thought the road will more than pay for itself in 1905 during the exposition.

THE CIRCUIT DES ARDENNES

While in Paris recently, Baron de Crawhez, president of the sporting committee of the Belgium Automobile Club, stated that the Ardennes race would take place one month before the Gordon Bennett international event, the entry fee to be \$200 per car. No manufacturer will be allowed to enter more than three cars and every driver will have to furnish a fee of \$100 for the privilege of training on the road during about one week. The training hours will be from 8 until 11 o'clock mornings and from 2 until 4 o'clock afternoons, as during these hours the roads are almost entirely free from traffic. Eighty dollars from

the original deposit of \$100 will be returned to the driver if he occasions no accidents of any kind, and the \$20 will be given to the villages along the course. The baron announced that besides being required to belong to one of the clubs recognized by the Belgian Automobile Club, the drivers will have to show a driving certificate from the club to which they belong. The event will be so arranged both as to date and distance as to enable foreign clubs to run their trials in connection with the event. The date was to have been selected at the Paris congress, which was to have been held December 15.

PLAN MANY THINGS

New York, Dec. 12.—At a meeting of the board of directors of the American Automobile Association held this week in this city the principal action taken was the decision to permit a series of concentrating tours to its automobile encampment at the St. Louis fair.

It was argued that in view of the recent acquisition of the clubs of New York, the promised affiliation of those of Massachusetts and the excellent prospects of motor vehicle organizations all over the United States joining the A. A. A. the laying out of routes, the arrangement of schedules and the promotion of the concentrating tours suggested would be an easy possibility and doubtless meet with general co-operation by the clubs. The matter will be brought before the members at large at the annual meeting, which will be held at Chicago during the show.

LONG ISLAND A. C. NEW OFFICERS

New York, Dec. 9.—At the annual meeting of the Long Island Automobile Club, held this evening at its clubhouse on Hanson place, Brooklyn, the regular ticket was elected without opposition. The new officers are: Frank G. Webb, president; Albert Wilmarth, vice president; H. P. Hanaford, secretary; Edwin Melvin, treasurer, and J. Adolph Mollenhauer, A. R. Pardington, Lawrence Abraham, Louis R. Adams, Frank G. Webb, H. P. Hanaford and Edwin Melvin, governors.

The annual banquet, which for the first time was served in the club house, followed. The secretary reported a membership of 90, which more than doubles the roll on its entry to its new club house a year ago. The treasurer's report showed all debts paid and a balance on hand.



Curious Swedish Children



MOTOR AGE

In the Alps



Roadside Repairs in Norway

MOTOR AGE

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OUR MOTOR CYCLE TRADE

A couple of years ago the Stanley cycle show of England, an annual feature since 1878, had one foot in the grave and the other was kept outside by an automobile adjunct.

The public's fervor in cycling had diminished to such an extent that it no longer rushed across London to Agricultural hall to view the latest vintage of bicycles.

The temporary tonic of automobiles was taken away, by the establishment of an exclusive automobile show, yet the Stanley and its rival show, the National, in Crystal Palace, came again and again, this year each being large and well attended.

The Stanley was an especially important trade affair. Why? Because there were about eighty-five distinct exhibits of motor bicycles, and about 700 motor bicycles on display altogether.

The people came primarily to see the motor bicycles.

Motor bicycling has become established in England. Perhaps 150 concerns are engaged in the manufacture of motor bicycles, or in the assembling of machines from sets of parts which are offered by a dozen different parts makers.

There is every indication that the business will greatly increase this year, especially on account of the introduction, in many patterns, of what are called fore-carriages, side-carriages and rear-carriages, which are more closely attached to the motor bicycle proper than the ordinary trailer seat. This construction especially in the form of a combination machine which may be used either as a regular motor bicycle or as a tricycle with a passenger's seat, has caught the fancy of the English and it stands a good show of becoming a standard motor machine, to occupy a position midway between the motor bicycle and the regular car.

Such machines are not practicable in most sections of the United States, on account of the roughness of our roads, which have always mitigated against tricycles.

There is nothing, however, to prevent the general use of motor bicycles.

They are just as serviceable here as in England. They require but a single track and there are few roads here which do not afford this in some way or other.

Yet the adoption of the motor bicycle has

been slowly brought about. There has been little vim and enthusiasm in it.

Time and time again the question is asked, "Will motor bicycling become popular?" It has not been regarded as a fixed conclusion that it will.

This position of doubt and hesitancy is due to sources the determination of which is just as problematical. In fact, it does not matter.

The situation exists. Why it came to exist is of no consequence. That it should be relieved may be taken for granted.

There is no point to be urged against motor cycling. It is a practical, cheap and rational means of transportation, whether for pleasure or for business.

How it may be relieved becomes the most important consideration, and, at first thought, almost as difficult of solution as the other points.

Yet knowing full well the enthusiastic make-up of the average American citizen, and using that as the basic premise, it is not so hard to draw a fairly conservative conclusion affecting the future of motor cycling in this country.

To enthuse a man quickly, cheaply and thoroughly is easy, when that one man is taken separately and individually, if more than one are to be enthused.

But the rapid creation of motor bicycling enthusiasm depends upon enthusing a whole lot of men, spread over a territory vastly greater than that of Great Britain or of any other European country. It cannot be done by individual methods.

The people must be reached collectively. They cannot be reached by means which appeal to only those of a certain section. Such methods are effective when they are repeated in all sections, when they are occurring simultaneously all over the country.

They are not effective when they happen now and then, here and there, and at a time when the lay press of the country is not caring a bit whether or not it publishes the ordinary news of ordinary local motor cycling.

Motor cycles are built primarily for road use. Their greatest utility is not in light boulevard running.

They are extremely valuable agents of travel in cross country work. Here lies the key note to the demonstration of them which will prove most effective in hastening their great popularity; for long road demonstrations, first of all, show the efficiency of the machine in the kind of service for which it is most intended, and at the same time produce an element of

popular news which cannot be overlooked by the newspapers of the country and a happening of just enough unusualness to attract the attention of the public.

There are many ways in which motor bicycling organizations or motor bicycle makers may arrange cross country educational trips.

There might be an endurance test sufficiently long and arduous to become a matter of news importance—say from New York to Chicago.

There might be arranged a go-as-you-please race from Chicago to New York between an automobilist and a motor bicyclist, each to drive his machine the entire distance.

There might even be arranged a well heralded race across the continent. This is feasible, for already one pioneer motor cyclist has ridden from San Francisco to New York, showing the accomplishment of this difficult trip to be possible.

Any or all of these runs, or others of a similar character, would greatly interest the public in the little two-wheelers and would doubtlessly make many immediate sales.

At any rate, they would cause new tourists among the numerous short distance motor cyclists.

The highway of touring once opened to motor cyclists generally and the old story of speedy popularization because of familiarity will be repeated.

Our motor bicycle trade has the material in it of a great industry. So good, in fact, is the material that it deserves better treatment than that of gradually working its way along without boosting.

FAITH, HOPE, CHARITY

It is just about a decade ago that the cyclist was hard at work campaigning against unjust legislation, fighting for good roads and endeavoring to reconcile a biased public to the man-propelled vehicle.

His rights were quickly interpreted by courts and granted by legislators; the farmer folk and the lay press were the last to come into the fold.

The automobile has already, in a comparatively short time, passed successfully through some of these stages, but the farmer and the lay press have yet to be won.

And yet, perhaps, this is an injustice to the former; the past season has demonstrated the friendliness of a majority of the inhabitants of the country, and the hearts of the recalcitrants are softening.

Not so, however, with most of the papers; they appear in many instances as anti-reconstructionists and obstructionists.

Modern progression even cannot change the policy of a great daily—nothing short of dollars and cents will work this wonder.

The daily press some years ago employed cycling editors; today the nearest approach to that functionary is the anti-automobile editor.

Notwithstanding the millions of dollars invested in the industry, or the thousands who are given employment, or the interest taken by all classes, or the support given their advertising columns, there is a constant crusade against all machines and all drivers.

One naturally wonders at all this when a great metropolitan daily is presumed to foster all that can consistently be called an advancement.

The change must and will come, just as it did in cycling days—we must have faith and hope and be charitable.

A Reminder That

THREE YEARS AGO THIS WEEK

Nine members of the Automobile Club of America turned up their coat collars and started on a club run to Bridgeport, Conn.

TWO YEARS AGO THIS WEEK

Rigal, near Paris, cut the then existing mile straightaway record to 53.2-5 seconds.

ONE YEAR AGO THIS WEEK

The last of the five entrants for positions on the American Gordon Bennett international race team paid his fee to the A. C. A. and the team stood, one selected, two to be chosen from four.

ENTRY NUMBER ONE IS MADE

Alden Sampson of Pittsfield, Mass., Sends Formal Entrance for Gordon Bennett Race Team to A. C. A.—Other Entries Hinge on Decision in Matter of Professional Drivers

New York, Dec. 14—Alden Sampson, II, of Pittsfield, Mass., has entered a car in the American team in the international cup race. Mr. Sampson is a member of the Automobile Club of America. His entry, accompanied by a check for \$600 for the entrance fee, was received by Secretary Butler this morning. The letter was purely formal and complied with the conditions set for entry by the racing committee of the club. It stated that a car was in course of construction. There were no details of its make or features.

Mr. Sampson is at the head of the Sampson Mfg. Co., at whose factory at Pittsfield, Mass., the touring cars and delivery wagons of the Moyea Automobile Co., of the St. James building, this city, are built. H. C. Cryder, general manager of the company, first learned the news by telephone from the writer. He said he was much surprised and declared he had received no intimation from Mr. Sampson of any intention of building a car for the American team elimination trials.

The natural assumption would seem to be that the car entered will be of the Moyea type, though Mr. Sampson does not say so in his letter of entry. Mr. Sampson is a young man of thirty, and is said to be a bold, skillful and enthusiastic driver. He does not name any driver in his letter, but in the present state of the rules—in the absence of any adoption, as yet, of the German amendment providing for entrants naming professional drivers, if they wish—it would have been premature for him to have named any one.

"Wally" H. Owen, a well known expert driver and former professional cycle racer, being prominent as a demonstrator of the Moyea cars, made by Mr. Sampson's company, suggests naturally the possibility of the entrants having him in mind as the driver of the car, should the German amendment prevail. Owen, while of the dare-devil order of driver, is skillful and not reckless, and would seem to be an ideal man at the wheel of Mr. Sampson's car. Mr. Cryder, knowing nothing of Mr. Sampson's entry or intentions, of course, could say nothing as to this.

The first Moyea car was built at the Automobile Co. of America's factory at Marion, N. J., during Mr. Cryder's connection with that concern. It was copied part by part from the Rochet-Schneider, brought to this country by Ernest Cuenod, at that time vice-president of the Automobile Club of Switzerland. With it M. Cuenod made the fastest time of the day in the hill climb, which was a part of the Long Island Automobile Club's endurance run of 1902. The name Moyea was given to the new car and company. Moyea in the Indian tongue signifies swift running. In subsequent speed trials on the road the American copy was said to have proved even faster than the French original. The touring cars and delivery wagons since built have not had, it is said, their engine changed from the original model.

A cable was received at the A. C. A. this morning from Clarence Gray Dinsmore, its foreign representative, stating that the international race committee would not meet until

Wednesday of this week instead of tomorrow as first announced here. This will result in still further delaying the closing of entries for the American team until the outcome of the Paris meeting is known and announced here.

It was said at the club this morning that the Packard people had asked for the conditions of the race, in addition to the inquiries of the Winton and Peerless companies. Col. Pardee was away from the Packard garage when the MOTOR AGE man called today, having gone to Detroit and Chicago. Mr. Smith, who was in charge, said he had heard nothing of any intended entry by the Packard company. The success of the Gray Wolf and Old Pacific would seem to lend credence to such an intention by their makers to see what could be done by any of combination of the speed and endurance qualities the two for the purposes of a race requiring them both.

C. G. Wridgway, manager of the Banker Bros. Co.'s New York branch, said to the writer this afternoon that Mr. Kittridge, of the Peerless Motor Car Co., had spoken of making an entry and had asked him what he thought of it. "I urged him to do so," said he, "and consented to drive the car for him provided he gave me a month's preliminary trial of it, and would carry out certain details in its construction, which I have in mind. I am pretty sure he is serious in the matter."

Mr. Wridgway is a former bicycle and motor cycle champion of England, and known as one of the best drivers and racing chauffeurs in this country. He is a member of the Automobile Club of America, so there would be no question of his eligibility whichever way the Paris meeting decides in the matter of owners naming drivers.

Percy Owen, when asked this morning as to the Winton probabilities, said that Oldfield had written him that he would be in Cleveland on Saturday last. Mr. Owen thinks that a conference between Mr. Winton and the track record holder on the subject of the latter's participation in the international race is not improbable.

Patriotism and common sense triumphed at the meeting of the board of governors of the A. C. A. held last Friday afternoon to reach a decision in the matter of the club's stand on the German club's proposed amendment as to drivers. President Searritt presided, the other members in attendance being George F. Chamberlain, A. R. Shattuck, Arthur Iselin, Col. Astor, Harlan W. Whipple, H. Henry Rogers Winthrop, Peter Cooper Hewitt and Dave Hennen Morris, who is also a member of the racing committee. O. W. Bright and George Isham Scott, of the latter, were also present.

There was a small majority who favored the club's advocacy of gentlemen riders only as carrying out the cup donors supposed original intention of an amateur contest. Mr. Searritt led the argument in favor of the club's adapting itself to changed conditions that could not be successfully opposed and placing this country on an equal footing with the others, which did not let any compunctions about professionals stand in the way of their

cars being driven by the best drivers. This view finally prevailed and it was unanimously voted to instruct Mr. Dinsmore to advocate a rule permitting members of challenging clubs to name drivers without restriction, but prohibiting professionals or non-members from entering cars in their own name.

A cable in today's Herald tells how the American club's suggestion is received in Paris. It follows:

A question of vital importance is to be settled and a precedent established affecting the annual international automobile cup contest at a meeting of the international committee at the Automobile Club de France on Wednesday.

This is the question—whether amateurs or professionals shall act as drivers in the great race to be run on the Homburg course next June.

Although the Automobile Club of America, in session at New York, has voted in favor of the employment of professionals as drivers in the American team, this depending, however, on the decision of the committee in Paris, it is not sure that professionals will be allowed a free hand in the race according to the rules.

The matter is of great importance because of the effect that a decision one way or the other is bound to have on the future of this high class and important international contest.

The question admits of arguments on both sides. Advocates of professional drivers maintain that manufacturers are desirous of obtaining the highest speed, and, therefore, the best results from the race, while advocates of amateur—gentlemen—drivers are anxious that the contest should be ever free from any influence that may partake of the nature of jockeying or "crookedness."

The writer had a talk with M. René de Knyff, at the Panhard stand, in the Grand Palais, yesterday, and he said that it was far from certain that the committee would vote in favor of the employment of professionals. Moreover, the donor of the international cup has something to say on that score, and his preference will have weight with the members of the international committee.

"I cannot say," remarked M. de Knyff, "that I entirely favor the professional idea. To speak plainly, the admission of the purely professional contingent to manipulate the steering wheels subjects this great contest to the dangers and taints of a class which—in a few instances at least—may be classified as 'un sale monde.' I make no direct reference to any particular driver, for this or that paid chauffeur may be as clean in his principles as any amateur on earth.

"But think of the great interests involved when you contemplate admitting drivers who might be—yes, on a pinch might be—bought.

"The original idea of this race was an international contest, representative of manufacturers and automobile clubs of different countries, and it seems that the latter class are taking a back seat and relinquishing their pretensions and their rights somewhat to the advantage of manufacturers."

"You are, particularly speaking, almost a professional yourself," was remarked.

"In a sense, if you like," replied the famous Panhard pilot. "But there are professionals and professionals. They are not all of the same grade."

In this case of hair splitting M. de Knyff is, of course, right, as he cannot be classified with those drivers who are paid "just so much" for driving this or that automobile to victory. M. de Knyff rather gave the impression that the committee at its meeting on Tuesday would vote against professionalism, although he did not exactly make that his prophecy.

The fact is that it requires a unanimous vote to formulate a decision, and it may be difficult to win all the delegates over to the side of professionalism. For instance, the Belgians are quite content to abide by the amateurs' side for the very good "self-interested" reason that they are at present provided with a number of aristocratic amateur drivers, such as Baron de Caters and Baron de Crawhez, who are just as skilful and just as daring as any professional.

As it requires the adverse vote of only one club to defeat the professional proposition, a legitimate doubt exists, therefore, as to the probability of the adoption of the principle advanced by the vote of the Automobile Club of America.

PARIS SHOW IS OPENED

President Loubet Starts the Great Exhibition Before a Large Throng—One American Car Shown—Motor Boats and Other Novelties Seen—Whole Affair Is Gorgeous

Paris, France, Dec. 14—Hundreds of automobiles lined the avenue in front of the Grand Palais, Thursday, while the owners were inside inspecting the new models which the manufacturers have prepared for the coming year. The automobilists, the high dignitaries, and the Parisian with only a few sous left after purchasing a ticket to the great show, mingled in the mad rush to be present on the opening day. The automobile show was the one great point of interest, and the enthusiasm seems to grow more intense as the hours go by.

Shortly before 10 o'clock Thursday morning the orchestra struck up the Marseilles, and a few moments later President Loubet and his ministerial escort entered the main doors of the building. The reception committee consisted of Baron de Zuylen, president of the Automobile Club of France; Gustave Rives, director general of the exposition; Marquise de Dion Balif, president of the Touring Club of France; Marquis de Chasseloup Loubat, Major Renard, MM. Louis and Fernand Renault, M. A. Darraq, M. Forestier, M. Michelin, M. Fournier, M. Klieger, Baron de Turkheim and Baron de Saint James.

President Loubet inspected many of the leading exhibits and listened with interest to the details of construction as explained by those in charge. He expressed his intention of again visiting the exposition and thus become better acquainted with the development of the automobile.

The visitors began to arrive at an early hour and the continuous stream of people soon filled the building. At 4 o'clock in the afternoon the crowd was so great that it was deemed advisable to close the big doors, and thousands of people were turned away.

The Oldsmobile is the only American car on exhibition, and it is found near the main entrance. Nearly every exhibitor shows a chassis, so that the principal parts of the mechanism are exposed for rapid inspection. The parts are all highly burnished and present a pleasing appearance.

One exhibit which attracts great attention is the car used by Captain Deasy in making the ascent of the Rochers de Naye mountain last fall. A section of the rails of the permanent way and the central cogged rail of the road over which the run was made is shown at the stand.

One of the star attractions is M. Prenaud Raille's train. This train was invented by the commander of the military balloon park. The motor is of 40-horsepower and supplies the motive power to each axle of each wagon, thus giving it tremendous hill climbing power. In a trial a 40-horsepower motor drew a train weighing 30 tons from Paris to Versailles.

There was but little business transacted the first day, as everyone was busy looking at the exhibits and gathering general information. The consensus of opinion expressed at the close of the first day was that there is little novelty, but marked improvement in the general finish of the cars and details of construction.

The attendance on the second day was smaller than on Thursday, but the crowd was large in the aggregate and composed prin-

cipally of society folk. A few orders were taken by the exhibitors but most of the prospective purchasers are still inspecting the various makes before making a final decision.

The display of automobile boats is quite a prominent feature, and great interest is manifested in this department by the special admirers of the water craft. In striking contrast is the languid interest shown in the bicycles, which occupy only narrow spaces and seem to be relics of the past.

An opera gala performance will be given on Thursday, December 17, by the Automobile Club of France at which over 200 ballet girls will appear on the stage in automobiles. There will be four allegoric cars, the first representing Holland and Belgium, the second Germany, Austria and Russia; the third, Italy and Spain, and the fourth France. The whole will conclude with a grand tableau—"The Apotheosis of the Automobile."

PROTEST NOT SUSTAINED

New York, Dec. 15—The referee of the Eagle Rock hill climb on Thanksgiving day has decided that the protest of the entrant of the Columbia car in the touring class against the Phelps machine on the ground that the latter did not comply with touring conditions in its equipment is not sustained. The decision is still withheld in the matter of the protest of American Automobile Storage Co. entrant of a Franklin in Class 2 on the ground that it did not fairly comply with retail price and stock car equipment.

CAMPAIGN AGAINST INFRINGERS

New York, Dec. 10—Twenty-two members were represented at the monthly meeting of the Association of Licensed Automobile Manufacturers today. Decision was reached to begin a campaign against the infringers of other patents, which the association by its agreement has undertaken to enforce. It was intimated after the meeting that suit would shortly be brought against an unlicensed importer. This will round out the enforcement campaign, action having already been begun against an in-

fringing automobile maker, dealer and user.

Trade prospects and policy were discussed as usual. An optimistic feeling was the outcome of the discussion. The next general meeting will be held on Friday of New York show week.

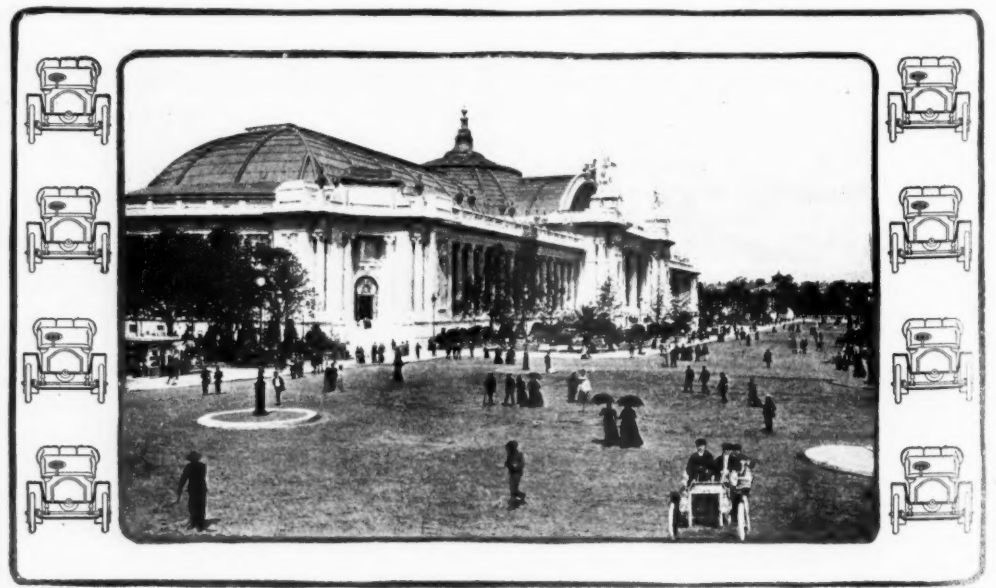
The Importers' Branch of the A. L. A. M. has put its affairs in charge of an executive committee composed of Smith & Mabley, the Standard Automobile Co., the New York Garage Co., and the Central Automobile Co. At tomorrow's meeting matters connected with the show and relating to commissions will be discussed.

NEW YORK ORGANIZATION

Syracuse, N. Y., Dec. 15—The certificate of incorporation of the New York State Automobile Association has been filed at the office of the Onondaga county clerk and the secretary of state at Albany. An adjourned meeting of the directors will be held at Albany, December 19. In the certificate of incorporation the objects are set forth as follows: To conduct a social and protective organization of all persons resident within the state of New York who are interested in motor pleasure vehicles, whether as members of clubs or not; to co-operate in securing rational legislation and the enactment and enforcement of proper laws, ordinances, rules and regulations governing the use of such vehicles in such state; to protect the interests of owners and users of motor pleasure vehicles against unjust or unreasonable legislation in such state; to promote and encourage the maintenance and construction of good roads and generally to maintain the rights and privileges of all persons who own or are interested in such vehicles, through some national association with which such corporation shall hereafter become affiliated.

The number of directors of the corporation is fixed at eleven and the names and residence of those to be directors until the first annual meeting are: Emerson Brooks, New York; A. R. Pardington, Brooklyn; C. M. Page, Albany; A. J. Baechle, Utica; Frederick H. Elliott, Syracuse; Selah C. Tallman, Auburn; Harvey S. Woodworth, Rochester; William H. Hotchkiss, Buffalo; Augustus H. Knell, Buffalo; Hurlburt W. Smith, Syracuse; Oliver A. Quayle, Albany.

The Automobile Club of Syracuse will hold a banquet at the Yates house January 6, at which time Harlan W. Whipple, who will be



MOTOR AGE

The Grand Palais, Where the Paris Show Is Held

the president of the A. A. A.; W. E. Scarritt, president of the A. C. A., and William H. Hotchkiss, president of the New York State Automobile Association, will be guests of honor. The banquet committee is Hurlburt W. Smith, W. L. Brown, Frederick H. Elliott, H. L. Pierce and C. Arthur Benjamin. Besides the above named guests, city and county officials and several who are interested in good roads will be invited to be present. At the last meeting of the club H. W. Smith was elected a director in the state association to succeed F. H. Elliott, who has been elected secretary-treasurer of that body.

The Syracuse Automobile Co. will hold an auction next Thursday, preparatory to moving into its new six-story building. Everything on hand will be sold, as it is Mr. Cornwall's intention to enter the new building with an entirely new stock. The advertisements say that any one buying a machine will be taught to run it free of charge.

The Brennan Motor Co. has been putting in some expensive new machinery, including engine lathes and milling machines. Mr. Brennan says the outlook for the automobile business is better than last year. He expects to have to enlarge his plant in the near future.

PAT THEMSELVES ON BACK

In their annual report to congress the commissioners of the District of Columbia make mention of the automobile regulations in the following words: "Regulations governing the operation of automobiles were adopted by the commissioners May 7, 1903, and became effective August 29. This action was in harmony with the course pursued by nearly every other municipality in the United States, and was rendered necessary by the numerous accidents due to the use of automobiles and the impossibility of identifying machines whose operators violated the regulations respecting speed. The regulations were framed with a two-fold object, namely, the identification of each automobile by a number and the examination and licensing of each automobile operator, so as to assure the public that each machine is under the control of a competent person. A number of automobilists contested the regulations on the ground that they were unjust and unreasonable; but, the matter being taken into court, the regulations were sustained in every detail. There are now few instances of non-compliance with the regulations, and the wisdom of their enactment has been fully demonstrated."

ELLIOTT C. LEE IS PRESIDENT

Boston, Dec. 12—The Massachusetts Automobile Club held its annual meeting this evening, when it elected these officers: President, Elliott C. Lee; vice-president, Frank E. Peabody; second vice-president, Joseph C. Stedman; treasurer, Royal R. Sheldon; secretary, Frederic Tudor, Jr.; executive committee, F. L. D. Rust, Arthur W. Stedman, Winfield S. Shrigley, Henry Howard, William A. Rolfe, Stephen W. Sleeper, George R. Alley, Otto B. Cole, F. Lothrop Ames and Quincy A. Shaw; election committee, C. Frederic Lyman, Gilmer Clapp and Charles Hayden.

The membership list now totals 169 active, four non-resident and two life members. The finances are in excellent condition, and the work on the new clubhouse to adjoin the present building will be commenced January 1.

ORGANIZE IN CAPITAL

Washington Motorists Propose To See Fair Play—Newspaper's Utterances Condemned

Washington, D. C., Dec. 12—The first step toward forming the local automobilists into an association to correct the abuses to which they are subjected constantly was taken Thursday night, when a few enthusiastic automobilists met in the office of Fulton R. Gordon, the well-known real estate dealer. Owing to the unpleasant weather the attendance was limited and after talking over the situation the meeting was adjourned until next week, when it is expected definite steps will be taken to effect an organization. The automobilists have broad ideas as to the enforcement of the regulations, and do not desire, as has been stated in the local papers, to antagonize the police in the enforcement of the regulations. They desire, however, to see them enforced with justice, and not to have automobilists prosecuted for alleged violations of the law, while street car motormen and driv-



E. C. Lee, New President Massachusetts Automobile Club

ers of horse-drawn vehicles who daily violate the law go unmolested. In a few instances street car motormen have been arrested for running their cars faster than 12 miles an hour—the limit for both street cars and automobiles—and they have been fined \$3, while automobilists are fined from \$5 to \$40 when they are so unfortunate as to be caught while speeding their cars too fast.

W. J. Foss, manager of the local branch of the Pope Mfg. Co., has addressed a letter to the management of the Washington Star, protesting against the bitter anti-automobile editorials which that paper constantly publishes. These editorial utterances have served to arouse public sentiment against automobiles and have undoubtedly hindered their sale in Washington. Among other things, Mr. Foss said: "I desire to protest against the frequent editorials in your paper relative to the enforcement of the automobile regulations. Not that I am opposed to the present speed regulations, but I do not see the necessity for trying to agitate this question before the public with the result of placing the automobilists of Washington at a disadvantage. It seems to me that your editorial writer might broaden his intellect by making a study of some other very deep subject, as well as the speed and operation of automobiles. If he would study the question of a good road between Washington and Baltimore he would be doing something worthy of your paper and incidentally really benefit the public of both Washington and Baltimore, to say nothing of property values between the two cities. Seriously, I really cannot understand the necessity for these editorials. They do not bring

forward any facts about accidents occurring, etc., which I think would be appropriate to the question."

Mr. Foss mentions the fact that his company is spending considerable money in advertising in the Star, as are the other automobile dealers, but he feels that so far as the good he has gotten out of the Star, in the face of the attitude assumed by that paper on automobile questions, it has amounted to less than nothing. Further, he says that if the attitude of the paper was correct he would endorse it, even if it happened to be against him, but in this incident it amounts practically to unjustifiable persecution. In conclusion, Mr. Foss says: "Your paper has also misled the public with reference to the present regulations being fully upheld by the courts. This will not be the case until the matter has finally been decided by the supreme court of the United States. The matter has not yet been decided, even by the court of appeals, where it is at present being considered."

In the suit of W. Leslie Edison, of the Edison Automobile Station, for an injunction against the Edison Automobile Co., of Washington, and David K. and George F. Joslin, the complainant has filed an amendment to his original bill in which he alleges that "as soon as he became aware of the nature of the representations made to him he refused to have anything further to do with the business begun by the defendants, and refused to recognize the legality of the Edison Automobile Co., of Washington." The complainant says he and Thomas A. Edison, his father, are not connected with the company nor has it the right to use the name of the latter. Proceedings have been begun in New Jersey by Thomas A. Edison and the Edison Storage Battery Co., asking for a permanent injunction against all the defendants in this case.

PROPOSES A HIGH LICENSE FEE

St. Paul, Minn., Dec. 15—"Minnesota's automobile license law is all wrong—a pure farce," says State Boiler Inspector Johnson, who has made such lively trouble for the automobilists of the Twin Cities the past summer. "Instead of charging \$2 for a license, turning \$1 into the county for general expenses, and \$1 into the boiler inspector's pocket, there should be a license fee of \$5 or \$10, and it should all go into a special county fund for the improvement of the county roads. As it is, the money collected is not enough to do the county or the boiler inspector any good. The licensing has done no good whatever this year. I further believe the legislature should pass a law providing a penalty for any automobilist who carries a horn or bell on his machine. The drivers would then have to take care that they did not run over people, and there would then be practically no accidents."

Mr. Johnson has made all kinds of trouble for automobile owners this year. He has scaled up all machines found without numbers, has insisted that numbers be placed firmly on the machines, instead of hung on leather pads, and has kept the auto owners strictly within the law.

WILL NOT DISCUSS PROTEST

Any discussion whatever of the protest of the Rambler entrant in the matter of the gold medal awards in the Pittsburg run has been refused at N. A. A. M. headquarters in New York.

HUB SHOW SPACE GONE

Late Comers Must Use Corridors— No Site Left in the City's Automobile Section

Boston, Dec. 14—The committee in charge of the automobile show of the Boston automobile dealers, to be held in Symphony hall in March, has given the use of one of its rooms to the Y. M. C. A. for the exhibition of the work and drawings of the automobile class now being held by that association. The automobile school was inaugurated this season and so far has done admirable work, and it is believed that by March it will have so far advanced in its studies as to be able to make an admirable display of its proficiency. At the meeting of the association held last week the committee announced the allotment of all the space in the main hall, so that the later applicants for spaces will be forced to accept positions in one of the three large corridors.

In the main hall will be displayed almost every known make of American machine, with a goodly sprinkling of those manufactured abroad, including several types never shown in this city, and which are likewise comparatively new to America. Little space remains at the disposal of the committee and this Manager Campbell is satisfied will be disposed of within the next few days.

The show committee, consisting of W. E. Eldridge, George H. Lowe, and Harry Fosdick, has determined that all delivery wagons shall be displayed in the corridors and that the main hall shall be reserved for pleasure vehicles. There is some advantage in this, as it places the business vehicle in a section by itself.

George W. Lowe, of the White Sewing Machine Co., is now deeply concerned in the securing of a site for the erection of a garage. He has already secured plans for a building, but is greatly lacking a suitable location. He is more or less handicapped in his business by the lack of suitable quarters, although it is less than six months since he made addition thereto.

Mr. Morrison, of the Peerless Manufacturing Co., has both the site and the plans for a new building, and is now considering several bids for the erection of the same. He has a site on Ferdinand street, adjacent to the building now being constructed for the Auto Express Co., the floor space of the building being 90 by 70 feet.

The Boston automobile business district was never so congested. Every store in the desirable section of the city is occupied, and there are several new agents clamoring for space, and the result is that several new firms have gone into business at the Park square station. Grout Bros., who heretofore held a position in the garage, have secured the store formerly occupied by Charles Henshaw. The Grout people are about to place their gasoline car on the market. The office at Park square station formerly occupied by Grout has been secured by F. Carleton Dole, general commission merchant, who expects to receive the Boston agency for the de Dietrich. Next door are Smith & Moore, the recently appointed agents of the Autocar Co. Drisko & Snow will this year handle the Clement and the Walter cars. The former is well known and the Walter is manufactured in New York by French mechanics.

A. E. Gilmore, of the Rambler branch, re-

turned from an extensive trip through New England during the week. He has established agencies in the larger cities of New England and says the outlook for the season is promising.

W. E. Eldridge, of the Pope Motor Car Co., is decidedly pleased over the fact that the authorities of the Boston Y. M. C. A. have selected the Cadillac as the working model for the small class of machines, the Toledo for the high powered model, and the Waverley as the electric to be used in its course of instruction in its automobile class.

The York party which started from Portland, Me., on its automobile trip to St. Louis was caught in a heavy snow storm in Beverly and shipped its machine to New York, from which point it will continue by the roads to St. Louis.

BUFFALO DEALERS ELECT OFFICERS

Buffalo, N. Y., Dec. 14—The automobile dealers of Buffalo held their first annual meeting at the Iroquois hotel Friday afternoon. The organization was temporarily formed October 22 last under the name of the Buffalo Automobile Dealers' Association. At a previous meeting, held a week ago, a committee of three, consisting of David H. Lewis, Roy Pelletier and John Gilson, was appointed to draw up a constitution. This was submitted to the meeting and adopted. The constitution changes the name of the organization to the Buffalo Automobile Trade Association.

The membership consists of two classes, active and associate. The former is made up of those engaged in the manufacture or sale of automobiles in and about Buffalo and the associate membership consists of those engaged in the manufacture or sale of automobile parts or accessories. The associate members are entitled to all the privileges of the association, but shall not have the right to hold office or vote. The election of officers took up considerable time, there being two tickets in the field, and the result follows: President, E. R. Thomas; vice president, Roy Pelletier; secretary, Dai H. Lewis; treasurer, John Gibson. The executive committee is composed of the above officers and E. C. Bull, J. B. Eccleston and P. W. Eigner. The membership committee is composed of John Frey, V. E. Ripper and C. W. Roe. Among those present at the meeting were: E. R. Thomas, of the E. R. Thomas Motor Co.; P. W. Eigner, Cleveland Cycle Co.; John Frey, O. K. Machine Works; E. C. Bull, George N. Pierce Co.; J. A. Cramer, W. O. Rutherford, B. F. Goodrich Rubber Co.; D. T. Keenan, Fisk Rubber Co.; F. A. Babcock, Buffalo Electric Carriage Co.; Roy Pelletier, Duquesne Motor Car Co.; John Gibson, Buffalo Automobile Exchange, and Dai H. Lewis, Globe Cycle Co.

The object of the association is to afford mutual protection to its members and to the public, and to develop, so far as it can, the automobile business.

WARREN AFTER THE FREDONIA

The Merchants' Association of Warren, O., is negotiating with the Fredonia Mfg. Co., of Youngstown, O., to remove its plant to Warren. It is reported the company views the proposition favorably and will make the move if Warren people or outsiders will subscribe \$75,000 toward the stock of the concern. The merchants feel the loss of the Packard company, and the citizens generally want to secure another automobile factory.

SEEK COLUMBIA AGENCY

Metzger of Detroit and Pence of Minneapolis in Hartford—Changes Made in the Big Factory

Hartford, Conn., Dec. 14—W. E. Metzger, of Detroit, one of the incorporators of the Cadillac Automobile Co., and H. E. Pence, an automobile agent of Minneapolis, have been in town during the week with the idea of taking on the new Columbia gasoline and electric vehicles in their cities. Mr. Metzger is familiar with automobile construction methods, and claims for Detroit that the city turned out 60 per cent or 6,500 autos last season and will put forth 50 per cent of the vehicles built next year, yet he had words of praise in plenty for the model factory of the Electric Vehicle Co. Mr. Metzger rather surprised the Hartford automobile builders when he told of a Detroit company having a brick addition 180 by 300 feet, one story high, completed in 14 days' time.

General Manager James Joyce, of the Electric Vehicle Co., took the visitors for a ride in a test car to New Haven, making the 42 miles down the mountain side and over roads made hard by the winter snows in 1 hour 8 minutes. Mr. Metzger has been giving much of his attention to industrial conditions in the east, with an eye on the prosperity of the automobile business for the season at hand. "I find that the Christmas trade in New York is larger than ever, with no signs of hard times anywhere. The Wall street values on stocks have depreciated in cases, but the rate of dividends is remaining the same throughout the country, and in the west we do not note any signs of coming hard times, nor are the earmarks of depression to be observed in the eastern country I have visited."

H. E. Pence says automobile conditions in Minneapolis are improving and he soon hopes to see the city as prominent in the sport as Buffalo. The people of the northwest have been too busy with good crops to take up automobiles, but he thinks the sport will take a boom during the season at hand.

Henry Hill, inspector of completed work at the Laurel street factory of the Electric Vehicle Co., and W. J. Fuller, master machinist, brought a moose from the Maine woods, where they had an enjoyable hunting trip. A moose dinner was tendered by the hunters to heads of departments. General Manager Joyce presided at the dinner, which was attended by Mechanical Engineer F. A. Law, gasoline department; Purchasing Agent McAneny, Assistant Secretary Wrisley, Advertising Manager Charles G. Huntington, and others of the staff to the number of 20.

The eagerness of the bicycle men to enter the automobile business is told in the engagement of Charles Keohew, who is working in the Electric Vehicle Co.'s factory attaining a practical education that he may replace Louis Caswell, another veteran, who has left his berth with the Hartford company to go into the parts business.

Work on a big order for electric delivery wagons to be used in New York continues at the Electric Vehicle Co.'s factory and President Budlong says the secrecy attending the big order is prescribed in the contract. There are some 75 vehicles going through, and they are to be delivered early in the spring season. The bodies are being turned out at the works

of the New Haven Carriage Co., which the Electric Vehicle Co. owns and controls, and many of the vehicles will be ready for the paint shop in a week or two.

Brown, Thomson & Co., the large syndicate department store, have lost the Knox agency in Hartford and S. A. Miner has taken it on. A year ago the same thing happened with the Oldsmobile, which Brown, Thomson & Co. lost and which Miner took on. The Orient buckboard has been added to the department store's line. It was handled last season by W. E. Kibbe.

MORE NEW GARAGES

Cleveland, O., Dec. 14—The Ohio Motor Car Co., of which Charles A. Post is president and Mrs. Mary A. Post, treasurer and general manager, has leased from M. B. and H. H. Johnson, the Loew building, on the west side of Erie street, across from the Y. M. C. A. building, in the district known as the "new center." The building is a large three-story brick with fine double display windows, and it will give the company ample space for storage and repair as well as for carrying a large stock of vehicles. During the past year the company has occupied a store in the Pythian Temple building within a short distance of the new store, and while the location was advantageous, the floor space and facilities for repairing cars were wholly inadequate. The company takes a 5-year lease on the new building and plans have already been prepared for an extensive re-vamping and repairing contract which is intended to convert the building into one of the finest garages in this section of the country. It is expected that the alterations will be completed about the first of the year. Mrs. Post has secured a valuable assistant in the person of T. C. Whitcomb, who was formerly with the Waverley factory, at Indianapolis, Ind.

Frank R. Blackmore, formerly an old-time bicycle rider and a veteran in the bicycle repair business, has opened a garage and repair shop on East Prospect street, opposite Watkins avenue. During the past 2 years Mr. Blackmore has been employed in one of the leading local automobile factories, where he obtained a thorough education in the construction of automobiles. He has equipped his repair shop with machinery suitable for repairing and rebuilding automobiles and has space for the storage of a number of machines. The location of the garage is an advantageous one, being in the most aristocratic portion of the east end residence district, besides being on the direct route followed by all automobilists in going to the east end parks and boulevard system.

NEW JONES-CORBIN CO.

A newly formed Jones-Corbin Automobile Co. has purchased the manufacturing property of the Jones-Corbin Co., of Philadelphia, Pa., which failed a short time ago. The new concern will continue the manufacture of the little single-cylinder Jones-Corbin car begun by its unfortunate predecessor and will introduce a 16-horsepower double-cylinder car, expecting to have this model ready in time for exhibition at the New York show. Mr. G. H. Jones has been retained as mechanical expert and designer, and W. H. Hinchman as sales manager.

The lectures on automobile construction given by Professor von Borries at the technical high school of Charlottenburg, near Berlin, Germany, are being attended by 250 students.

PLAN MOTOR LECTURES

Pittsburg Club Follows Boston's Idea of Gaining Public Favor—Auto Express Line Inaugurated

Pittsburg, Pa., Dec. 14—The Pittsburg Automobile Club is arranging for a series of lectures on automobile topics, to be held in Carnegie Institute some time in February. W. L. Elkins and W. J. Lewis are the committee in charge of the course and they will secure some of the best known automobile authorities in the country, including two or more prominent manufacturers. Part of the lectures will be strictly technical, designed especially for the instruction and entertainment of automobilists. Most of them, however, will be on topics of general interest to the automobile public and will be illustrated by stereopticon views. All will be open to the public at large and as the venture is an innovation in Pennsylvania, it is expected to be largely patronized.

The aim of the club is to start an educational campaign looking to the alleviation of the abuses of highway privileges and excessive speed. Automobile law will be fully explained and city rules made plain. W. Linford Smith, president of the club, takes the ground that an automobilist has as much right on the highway as the teamster and that there is no need of any conflict between them if they have proper understanding of their places. The lectures are expected to kindle a much more favorable public sentiment toward automobilists and thus add to the popularity of the automobile.

The club will also hold a big smoker at the Country Club in January. The club has now over 200 members and has undertaken more events the last year than any other automobile organization in America. Its power in local circles was conclusively shown in the speedy arrest and conviction of a boy who shot one of its members while returning from the Butler endurance run. In a few weeks the club will have possession of its new house in the East End, which will be greatly enlarged and remodeled to make it a fitting home for the organization.

The automobile express between Pittsburg and Homestead has been started and is likely to prove a great success. Twenty-horsepower stam trucks that will carry 8 tons of freight each will soon outstrip the slow delivery wagons drawn by horses and mules. The express cars will make six trips daily and will save a great amount of time by having light delivery wagons at each end of the route to gather the freight and express parcels and take them to one central point, obviating the necessity of the express car threading its way through crowded down town streets. This saving of time will enable the cars to deliver a package anywhere within 10 miles of Pittsburg in 2 hours, or less time than the express companies take.

The cars cost \$3,500 each and will have a minimum speed of 10 miles an hour. The system is designed to make quick delivery of light freight possible and no passengers will be carried. Besides the central receiving station in Pittsburg and Homestead every town along the route has a parcel post where packages can be left. The cost of running the cars is comparatively low and from present indications the owners will receive sufficient freight to make the venture a paying one. At present merchants who patronize the wagon deliveries

often have their packages delayed 36 hours after leaving the store before they reach the customer. Homestead is the worst town in western Pennsylvania for freight congestion, as neither of the railroads has good freight stations or yards large enough to accommodate business. It is evident that with better roads the automobile express system would be a powerful rival of the regular express companies and would put the old-fashioned dray and horse express wagons out of business in a short time. If the Pittsburg-Homestead line pays as well as it promises, other lines will be established in the spring, connecting Braudock, East Pittsburg, Turtle Creek, Wilmerding, McKeesport and Wilkensburg.

NOW AN OHIO CONCERN

The stockholders of the Sandusky Automobile Co., of Sandusky, O., at a meeting last week, voted to surrender the Delaware charter, under which it is incorporated with a capital stock of \$100,000, and incorporate under the Ohio laws with a capital stock of \$150,000. The name of the company will remain unchanged. The change to an Ohio charter was the result of the recent amendment in the Ohio laws, making only a single liability for stockholders, instead of the double liability, as heretofore.

The incorporators of the company under the Ohio law will be James J. Hinde, J. S. Bennett, George F. Leingang, Henry J. Beilstein and C. C. Bittner. The stockholders under the Delaware charter will receive the same amount of stock under the Ohio charter.

The company will have the following board of directors: James J. Hinde, J. S. Bennett, F. P. Zollinger, E. J. Cable and R. C. Lupton. The company has issued its 1904 catalogue and will exploit its car next year under the name of the Courier. A detailed description of this car will appear in a future issue of MOTOR AGE.

COAST BUSINESS GROWING

San Francisco, Cal., Dec. 12—The Mobile Carriage Co., of San Francisco, Cal., which was incorporated over a year ago for carrying on an automobile passenger service, some time ago purchased the interests of the Mobile Co. of America on the Coast. It has actively entered the gasoline business and secured the California agencies for the Pierce Arrow, Pierce Stanhope and the Northern.

It now has in course of construction a large automobile house and garage. The new location has a frontage of 137½ feet on Golden Gate avenue, 120 feet on Gough street and Jefferson square, and 137½ feet on Elm avenue. The building will be one story high, with Grecian style of architecture. It will have a parlor and reception room, with private lockers for women, and a club room and such other facilities for men as go with a modern garage.

The automobile passenger service has been increased by adding a carload of Santos Dumont touring cars and Fredonias to a large number of steam cars already in use. The directors of the company are J. Alfred Marsh, president; Livingston Jenks, Heber C. Tilden, Charles K. Harley and Charles L. Tilden.

The Automobile Club of France has decided to open a subscription for the purpose of erecting a monument to Count Gaston de Chasseloup-Loubat. The Auto's subscription fund will be added to that of the club.

THE READERS' CLEARING HOUSE

ANTI-FREEZING SOLUTIONS

Louisville, Ky.—Editor MOTOR AGE—I noticed in MOTOR AGE of a recent issue formulas for anti-freezing solutions for the water cooling systems of gasoline automobiles. Will the calcium chloride solution injure copper or galvanized iron pipes? Will the glycerine solution boil away?—A. T. POPE.

The calcium chloride solution has been used extensively and there has been no complaint of actual injury to the pipes of the car. The glycerine solution will of course evaporate gradually, just as does the water used ordinarily, the extent of evaporation depending upon the character and efficiency of the water circulating system. It will not be used up more rapidly, however, than plain water.

GETTING EXPERIENCE

Westfield, N. J.—Editor of Motor Age—In this era of organization, I am of the opinion that owners of automobiles should organize for mutual protection against agents, repair men and perhaps manufacturers, who apparently look upon them as "good things," "easy marks," etc.

Experience has taught me that the average agent in this line is a veritable "Dr. Jekyll and Mr. Hyde" in that before one makes a purchase there is nothing under the sun that he will not offer to do, but after the car has been paid for—well, that is different; he will rarely admit that there is anything wrong with the construction of their product, and if one appeals directly to the manufacturer, he, very promptly, refers it back to the agent, and between the two there is "nothing doing" for the owner.

I bought, early in the summer, a gasoline runabout, waited 5 weeks after the time agreed upon for delivery, and threatened to cancel the order unless delivery was made at once. I finally received it, but then had an annoying wait of 6 weeks for the tonneau, which the agent told me, before taking my order, would come with the car, and I could take it or not, as I felt disposed.

I had never operated an automobile before this one was delivered to me, and, therefore, it is not surprising that I failed to notice that the front wheels were "dished"—I do not believe I ever heard of the term until it was forcibly brought to my attention that my two front tires were worn down to the canvas; in fact, through two or three layers of it. In my efforts to locate the difficulty, a kind friend informed me that the front wheels were badly "dished." Naturally I appealed to the agent and then the fun (?) began.

The agent referred me to the manufacturers of the tires. "Clearly the fault of the tires," he said. The tire man looked over the tire I had sent to him and remarked, "Too bad that they should send out a car like that, their fault surely." Again I brought up the matter to the agent, who again referred me to the tire man, who again would do nothing. So in despair I wrote to the manufacturers of the car. At first they did not reply, but I wrote again and finally

they wrote back that "the matter would have to be taken up with the agent, of whom I made the purchase"—a sort of "back to the woods" reply. I did not bother them any more—simply bought new tires and paid full price for them.

The above is but an illustration of the troubles I have had in obtaining any satisfaction from either agent or manufacturer of my car. The repairs (?) made by the so-called experts have cost me a lot of money. I have paid for new parts at from 100 to 300 per cent above the proper price. In fact, the last bill I received was so large that I thought at first I would offer my automobile in payment of it, but I did not, and taking all of the above in consideration, is it surprising that my car is now offered for sale? But when I buy another next year—I am not discouraged yet—my recent experience will surely prove of value to me.—JERSEY.

IGNITION GENERATORS

Dayton, O.—Editor MOTOR AGE—A gentleman in Florida, the owner of a gasoline touring car, recently wrote his manufacturers as follows: "The trials of an automobile owner are without equal and there are many times when it would seem as though the proper cuss words had not yet been coined that would properly apply to satisfy and ease these moments of intense disgust. I have coined a few hundred myself, but when my ignition system is faulty and I tackle the proposition of remedying it, I simply throw up my hands in despair."

If ignition causes so much trouble to the consumer, think of the sleepless nights spent by the anxious automobile manufacturer as he has tried to devise some means of furnishing a constant and ample supply of current for the ignition of his motors.

Nearly every prominent manufacturer has followed in the footsteps of the pioneer gasoline engine makers, and has tried liquid primary batteries of many types and storage batteries of various designs. He may have found a dozen kinds of batteries that gave an ample supply of current for a time, but alas and alack, they were soon exhausted and needed renewing. This meant dirty work, trouble, an-

noyance and expense for the purchaser of the car, and as other purchasers were looked for it became necessary to use some battery that was simple, easily renewed and inexpensive.

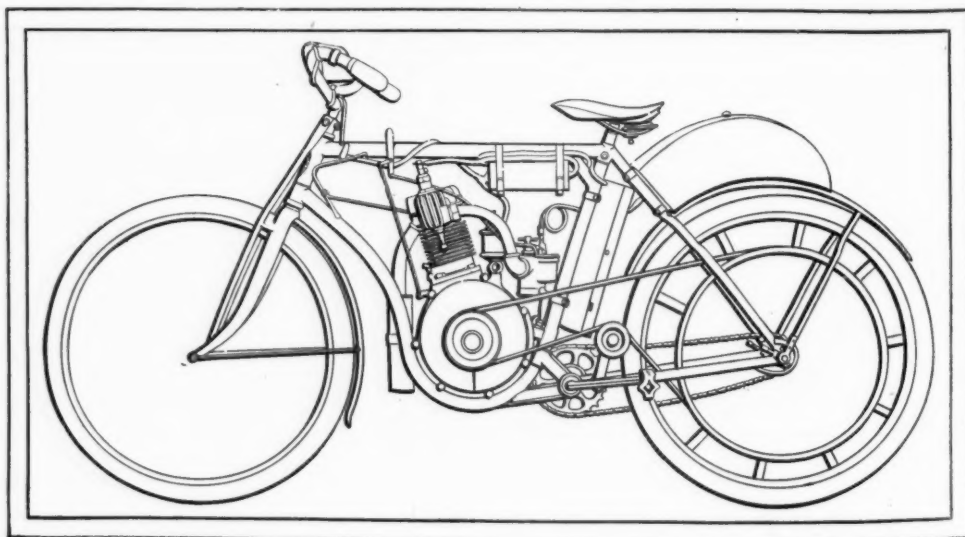
A battery filling these requirements has never been made, but the dry battery of to-day thrown upon the market by the million, has been very generally adopted for automobile work. It is simple and compact; there is no denying this fact. It gives an ample supply of current when new, but its length of life is short and uncertain. It may last 3 months or 3 days, the user never knows how long until his engine stops and he finds his cells dead. They must then be relegated to the scrap heap and new ones installed.

Some of the manufacturers have grown wise and have followed the head of the continental makers in the use of dynamo and magneto generators, others have seen and appreciated the sphere of usefulness of mechanical generators and yet have hesitated to adopt the same for their cars, merely because of the additional expense involved.

To the unbiased but experienced user of a gasoline car, it seems that it can only be a question of time—and not long, either—before every maker will equip all machines with a mechanical generator, either as the sole source of current, or to be used with an auxiliary set of dry batteries.

The latter combination is a good one, as the batteries can be used for starting, thus getting rid of the necessity of cranking to get the initial spark from the generator. After the motor is started it is an easy matter to throw the switch from the battery to the dynamo and so let the latter do the heavy work of furnishing the current just so long as one wishes to run the engine. If used only for starting, the batteries will last a long time, generally a full season, before they will need to be replaced.

And now a word regarding the kind of generator to buy. It is not necessary to look to France or Germany for a high-priced machine that will do the work and do it effectively. We can find American made dynamos and magnetos that surpass the foreign made generators in every respect. If you use the make and break or contact system, a magneto will answer your requirements. A magneto is a generator with permanent magnets and is inexpensive. There are at least a dozen American made magnetos on the market that will give ample current for successfully working a primary coil. Select one that will give about 10 volts and 1 to 1½ amperes at its established speed, but do not



MOTOR AGE

Hillman's Motor Bicycle

expect a machine of this type to do good work with a jump spark coil.

The jump spark system requires higher amperage and this is found in a dynamo only, which should give 10 volts and 4 amperes if used on the average secondary coils found in the American market.

Several dynamos with this output, and which are not so expensive as to put them out of the reach of the average manufacturer for use as a part of his regular equipment, are now found advertised in the trade papers. Some of them have been used for eight or ten years on stationary gas engines, and have proven themselves satisfactory for marine and automobile engines.

The automobile manufacturer knows that dry batteries alone are not satisfactory and he should not wait for his customers to learn this in the bitter school of experience and then force him to supply them with generators. He should forestall any possible trouble by finding a suitable generator and batteries and equipping his car with the same so that the automobile owner will be assured of plenty of current at all times.

The dynamo is the only practical source of current yet discovered for electric lighting and electric power work and it seems absurd for the motor world to depend on uncertain chemical processes for ignition when a small dynamo will mechanically generate current year in and year out at practically no cost after the original expense of installation. Dynamos for this work may be found, and are just as perfectly made and work just as satisfactorily as the dynamos found in central electric light stations.—R. L. HUBLER.

HOME MADE MOTOR CYCLE

Chester, Pa.—EDITOR MOTOR AGE—A motor cycle which I built and have used three months gives splendid results. The motor's dimensions are $3\frac{1}{2}$ by $3\frac{1}{4}$ inches and runs at 1,600 revolutions, drives a flat belt 1 inch wide, and is geared 4 to 1. It will climb a 12 per cent grade without help. It is fitted with a new contact device of my own design, which works rapidly and never misses. The contact maker and spark plug have never been cleaned or even looked at. The carbureter is a Kingston, and the motor starts on the first turn. A Williams coil, Columbia battery and Dow mica plug are used. The frame is of 16 gauge tubing, reinforced; tandem forks, with bridge brace; steel rims with 2-inch G & J motor cycle tires. The wheel base is 50 inches. The saddle is very low, which gives the rider an easy position and makes control easy. The gasoline tank carries 7 quarts, enough for 125 miles, and the sight feed oiler carries enough oil for 50 miles. On good roads I have made 41 miles per hour, and as I have very large balance wheels I am able to run at a very low pace. With the carbureter throttled to about 15 miles per hour the motor is almost noiseless on a level road.—A. L. HILAMAN.

ONE PIECE INLET VALVE

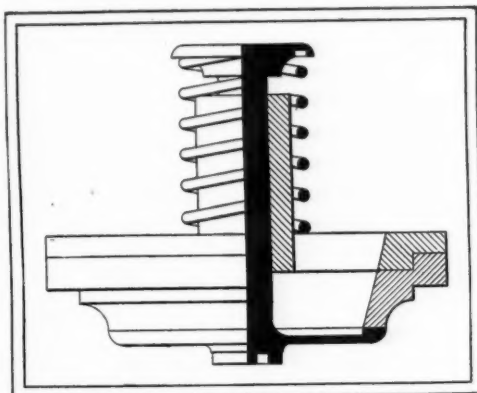
Rhinebeck, N. Y.—EDITOR MOTOR AGE—The accompanying half sectional and half elevation drawing shows the construction of a single piece inlet valve of my design and for which I have applied for letters patent. The valve itself, including the head and stem, is made of one piece of suitable metal, thus obviating nuts, loose collars, cotter pins and other common sources of trouble. The valve seat is made of

cast grey iron in ring form, with annular recess on in its upper face. Into this recess fits the spider, which is preferably made of bronze. This is diametrically split vertically and is held in position by the engagement of its shoulder with the valve seat. The spider is thus prevented from spreading, while the spring holds the parts of the whole group together. To assemble the valve set the stem of the valve proper is thrust through the seat ring and the two half sections of the spider are then placed in position on the seat and surrounding the valve stem. The spring is then screwed on spirally over the button head or fixed collar on the valve stem.

This construction reduces the tendency to wear and increase of valve lift thereby, and also reduces the chance of breakage. The valve set may be made somewhat lighter than that of ordinary construction, as the valve stem may be all or partly tubular if desired. I have valves of this construction in constant use on a Panhard car and they have proved successful.—B. MORGAN.

AUTOMOBILE RELIABILITY PROVEN

Reading, Pa.—EDITOR MOTOR AGE—Any well informed man knows the motor vehicle surpasses the horse in capability. It can run



MOTOR AGE

Morgan's One-Piece Inlet Valve

faster and run longer, stop quicker, start sooner and is more reliable than the animal. Everyone knows that automobilists are daily taking trips that would not be considered by horse drivers, and if this is not proof of reliability what can be asked? But, while people know this, like irrational beings, they are not ready to act on it. Busy doctors, for instance, are still using horses and refusing the opportunity to save time and money that a first-class motor vehicle offers them. While a few have taken up the new method of locomotion, the majority protest their unbelief in spite of evidence that would be accepted by any court in the world. Not only this, but they even refuse to be convinced, and when asked to buy a motor vehicle protest that it will not run in the winter; that it will get stuck on the road; that it cannot climb hills; that it breaks down; that they could not manage it, and many other excuses wholly ridiculous in the present state of the art.

If the vehicle has more capability than the horse, as is proven daily, it can certainly traverse snow and mud in a far superior manner, and it only needs comparison on snowy and icy days in winter to prove this fact. Horses labor along because of the additional work imposed on them; they move slowly because of danger of slipping and falling, with likelihood of injury. They chill quickly when stopped and must therefore be blanketed or otherwise cared for; their slow speed makes the

short days still shorter and, in many other ways, their inferiority is proclaimed. On the other hand, the automobile does not fall down. While it may skid slightly, it is not dangerous from this cause and is but little more likely to skid in the winter time than on wet asphalt streets in summer, so this objection may be disregarded.

The gasoline motor vehicle, if provided with a readily obtained anti-freezing solution, can be protected against freezing and is therefore usable throughout the year. It is ready to start at any time, regardless of how long standing, and can be started ordinarily much quicker than a horse can be unblanketed and untied. When stopped no blanketing or tying is necessary, with a consequent saving of time and less exposure to the weather for the driver. With top and storm apron better protection is secured than with a horse vehicle, for no lines or whip are necessary and the entire controlling mechanism is enclosed under the storm apron. Further, the heat of the exhaust gases can be used in a radiator to warm the vehicle, keeping one's feet and body as comfortable as in an office. Since no feeding is necessary and attention required but once each hundred miles, more or less, it would seem evident that a large saving of time arises from this fact.

When the added speed is considered, it becomes perfectly evident that from $\frac{1}{2}$ to $\frac{3}{4}$ of the time ordinarily expended in driving may be saved by the use of a motor vehicle and that the advantages of the motor vehicle in the winter over the horse are far more pronounced than in summer. While with most vehicles starting is more difficult in cold weather, this can usually be readily overcome by using a lighter grade of gasoline or some similar provision. The probability of tire troubles almost disappears with freezing temperature, for dry rubber cuts and punctures with difficulty, and since in freezing weather the streets are frozen dry, all worries about tires cease. Not only is the tire more durable when cold, but patches do not loosen as in hot weather, and puncture causes, such as tacks, nails, bits of glass and the like are frequently buried beneath a layer of snow. Many people erroneously imagine that the ice and snow will cut the rubber, but experience indicates that this is fallacious and we believe the experience of users will bear out the statement made that tire troubles are much less frequent in winter than in summer.

If the vehicle has ample power to overcome the slightly added resistance due to the snow and slush, as most first-class vehicles now have, there is no fear about the ability to meet winter conditions; and the saving in exposure, due to shortened time on the road, is an item worth considering, even if the saving in time is of no value to the busy man. Since, however, this amounts to several hours daily for physicians who have outdoor work, it would seem that no busy physician working for dollars could afford to neglect the time and money saving institution offered him in the shape of a good automobile.—CHAS. E. DURYEA.

AUSTRALIAN MOTOR BUSES

The first Australian automobile omnibus service was inaugurated last September in Western Australia, over the road from Perth to Victoria Park. The cars are equipped with 12-horsepower motors, which will be replaced by 24-horsepower motors, as it was found the lighter one could not render the service expected.

AUTOMOBILE BOATING



EXPECTS 18 MILES AN HOUR

New York, Dec. 6—M. Massenat, of the American branch of the Panhard-Levasser company, has placed an order with the Electric Launch Co., of Bayonne, N. J., for an automobile boat, which is now under course of construction. The hull will be constructed in the lightest possible manner, two thicknesses of planking, mahogany and elm, being glued together, making the total thickness less than $\frac{3}{8}$ of an inch. The weight of this shell like hull will not exceed 800 pounds.

There will be an engine cockpit and a seating cockpit, divided by a short deck. The engine will be placed forward, directly behind the wheel, thereby permitting the man who steers the boat to also conveniently handle the engine. In the after cockpit seating accommodations will be provided for six, with the regular style of automobile seats, all facing forward.

The weight of the motor will be less than 600 pounds and the capacity of the engine 20 horsepower. The total displacement of the boat will be only 1,400 pounds.

The length is 30 feet, beam 4 feet 6 inches freeboard 15 inches and draught 8 inches, so that she will practically be driven on the top of the water. The builders expect that a speed of from 16 miles to 18 miles will be developed.

HARTFORD HAS BOAT FEVER

Hartford, Conn., Dec. 14—The automobile boat fever has struck Hartford hard and the coming yachting season will see a large number of these craft on the Connecticut river. Secretary Joseph Merritt of the Hartford Yacht Club has purchased a 60-foot open launch with a four cylinder 75-horse Craig motor. Fred A. Law is putting power into the clipper hull he picked up last year, while Designer E. N. Way has a model cut and plans on the board for a 60-foot launch with three cockpits, into which heavy power of a motor not yet decided upon is to be installed.

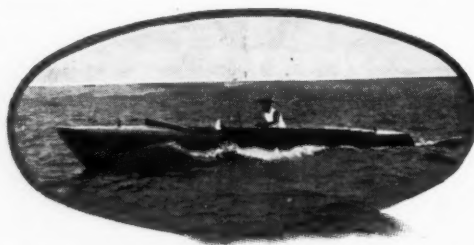
DETROIT AFTER SPEED

Detroit, than which no place in the world excels as a desirable yachting and launching spot, not to be outdone by others, has taken to the speed boat with a vim, particularly after the fall launch races proved conclusively that there was no very fast boat in nearby waters. W. Murray Smith has had constructed for his own use, and for racing purposes as well, a boat 32½ feet long by 4½ feet wide and a draft of but 8 inches, exclusive of the wheel. It is of torpedo model, yet something vastly different from anything ever put out, being almost flat its entire length. The forward

deck is 9 feet long, with a 5-inch sweep. The boat weighs 600 pounds and the motor another 600 pounds. The frame work is of $\frac{1}{2}$ by 1 inch ribs spaced 8 inches, while the keel is 5 inches deep and 2 inches wide. The planking is of 7-16 cedar and the inside finish of thin oak. The boat is as plainly built as possible, with an automobile wheel for steering, this being placed immediately forward of an easy chair.

The motor is a four cylinder, the dimensions being 5 by 5, the connecting rods, crank shaft and other parts being made from nickel steel and nickel bronze wherever possible. All joints are ground, doing away with packing entirely. The makers claim 120 pounds compression, with no relief.

The engine will drive an 18-inch three-blade wheel, which will be set well abaft the rudder so that there will be no lack of solid water. The motor is designed to turn up as high as 1,000 revolutions and it is claimed it will develop 42-horsepower. The makers of boat and motor and the owner fully expect to reach the



MOTOR AGE

Motor Boat Express

20-mile-an-hour mark and have some idea that possibly the craft will exceed that by a small margin.

MOTOR BOATS FOR BUSINESS

Probably the first speed launch made as a purely business proposition is owned by C. D. Mower, measurer of the New York Yacht Club, who found it necessary to have something with which he could make his rounds at a time-saving gait. The boat, named the Express, is built comparatively flat under the stern, has an overhang at the bow, so as to give it a chance to rise in a head sea, and is 26 feet 10 inches long by 4 feet wide.

The motor, tank, seats, and all machinery are placed as near the midship section as possible, so as to give the boat the greatest buoyancy and prevent improper trimming. The motor is an 8-horse power Buffalo automobile engine, with jump spark, reverse clutch and a

solid three-blade wheel of 17 inches in diameter and having a 19-inch pitch. This the motor turns up at 800 revolutions per minute. In a 21-knot trial under the auspices of the American Yacht Club the boat made the course in 1 hour, 48 minutes, 16 seconds, having three people aboard, making several close turns around buoys and with its machinery new and stiff. It is estimated by the owner that with the motor and its parts worn smooth, and with two people aboard, the boat on a straightaway course can come pretty close to 15 miles an hour, which is exceedingly good speed when the size of the boat and the power of the motor are taken into consideration.

DECAUVILLE BOATS

E. T. Birdsall, manager of the Standard Automobile Co., of New York, now enroute to the Paris show, while abroad is to arrange for the importation of Decauville engines, which will be fitted to hulls to be built by a well known firm of yacht builders. His company will go in quite extensively for power boats next season and will also turn out models fitted with small motors designed by Mr. Birdsall.

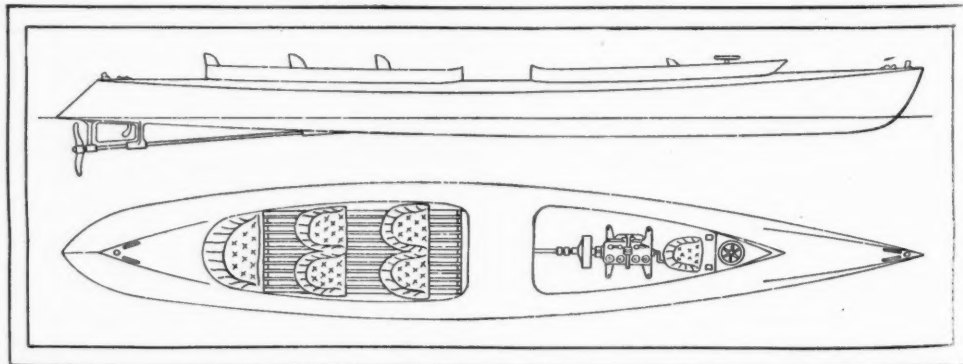
MOTOR BOAT NOTES

The speed launch will be responsible for the formation of launch clubs, Buffalo having recently organized such an affair.

The south is well sprinkled with power boats, the property of well-to-do northerners, who spend the cold days in sunny lands and who leave so hurriedly in the spring that little time is given to caring for boats. The result is that many are out of commission and capable repair men are so few that heretofore at least the reputation of the power boat has suffered. There is an immense field for the motor repair man in some southern sections.

During a recent storm on the coast of Denmark a small automobile boat, with a 3½-horsepower motor, after struggling for nearly 24 hours with the inclement weather, reached a broken spar to which two sailors were clinging. After saving them, the boat was carried over 20 miles by the waves before a landing could be made.

Nothing further has been done toward securing the attendance at the St. Louis fair of the Mercedes and Napier motor boats, and it is probable that if there are any speed launches there and races are held only American boats will be competitors. The fast development of speed boats here, however, should supply sufficient interest for anybody.



MOTOR AGE

The Panhard Boat Being Built at Bayonne, N. J.

THE FIELD OF AUTOMOBILE DEVELOPMENT

MODEL TONNEAU RUNABOUT

The Model Gas Engine Co., of Auburn, Ind., is introducing a car of the cross-pattern style, combining the essential features in design of the heavy runabout and the light tonneau, but which is exceptional in its power plant and transmission equipment. The motor is of the double opposed cylinder pattern, of 12-horsepower and the transmission is by sliding gears, furnishing three forward and two reverse drives.

The main frame is constructed of angle steel, forged from one piece. It is fitted with semi-elliptic springs, artillery wheels and either 2½ by 28 or 3 by 30-inch double detachable tires. The wheel base is 72 inches, tread 56 inches. Timken roller bearings are used in the front wheels and Hyatt roller bearings on the rear axle.

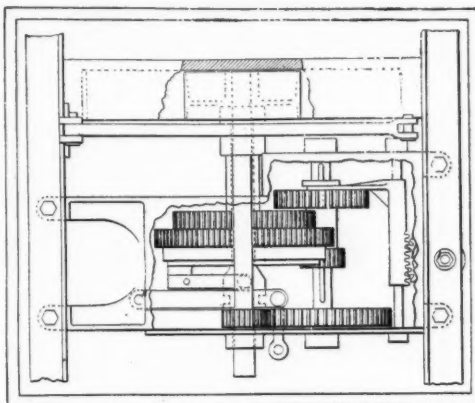
The cylinders are 4¼ by 5 inches, showing 12-horsepower at 1,000 revolutions. The valve chambers are cast with the cylinders, and completely surrounded by the water jacket. The coverings for the valves are cup-shaped plates with ball and socket ground joints, no packing being used about the engine. Both the carbureter and inlet pipes are 1¼-inch, while the inlet and exhaust valves are 1½-inch. These large valves are used in order that they need not be lifted from the seat too far, doing away with much of the noise and getting a greater area at the beginning of the stroke, when the cam first starts to lift the valve. All valves are mechanically operated, and the two inlet and two exhaust valves are each operated with one cam.

All bearings are of brass, arranged for taking up wear, instead of using brass bushings. Every bearing surface, such as the crank shaft and connecting rod, are adjustable for taking up wear.

The crank case cover is of aluminum and the crank case itself is oil tight. The lubricator is mounted on the top of the crank case cover and arranged with an automatic check for force feed. The engine is so constructed that every piece, including the cam shaft, valves, crank shaft, pistons, and connecting rods can be removed without disturbing the cylinders. The pistons can be removed without disturbing the crank shaft.

The commutator is mounted on the cam shaft and is entirely enclosed, having a screw cap, in which mica covering is inserted. No gears or working parts of any kind are exposed. The speed is controlled by changing the time of ignition and by throttling the carbureter. Dry cell batteries are used with a nonvibrating Dow coil. For cooling a water tank and radiator are provided with a centrifugal pump mounted immediately under the tank and driven with a friction wheel against the balance wheel. The water tank holds 2½ gallons and the gasoline tank 6 gallons. The weight of the engine complete is 275 pounds.

The main transmission gear clutch case serves the double purpose of a clutch and two gears, spur gears of two diameters being cut on it. It has a sprocket wheel rigidly attached and is mounted loosely on the engine shaft. The clutch carrier is keyed fast to the engine shaft, and when driving on the high speed the cone is pushed in, locking the clutch case with the carrier by means of a friction shoe, thus driving at the same speed of the engine shaft



MOTOR AGE
The Model Transmission

and with no gears or any other part of the transmission in motion.

For intermediate speed, a friction wheel is brought into contact with the corresponding friction surface on the clutch. On the opposite end of this shaft is a steel pinion, meshing into a brass gear mounted on a counter shaft. Two gears of steel are rigidly attached together, but arranged to slide on the same shaft. By means of the shift quadrant one gear is shifted in position to engage a gear on the clutch case, thus driving at about half the speed of the high. The high reverse speed is obtained by a movement of the lever backwards, bringing the friction roller in contact with the friction surface.

The slowest forward speed and slowest reverse speed are obtained through the same gears, except the pinion is shifted in the opposite direction to engage another gear. This gives a speed of about a sixth of the high speed forward and about a twentieth backward. It will be seen that the low speed gears are in a neutral position straddling the clutch case gears and when on the high speed.

Only four gears are used besides the two cut on the clutch case, and two of these are but 2 inches in diameter. In every case steel gears mesh in brass. The entire transmission, as well as the clutch, is in an oil tight aluminum case. The friction clutch is a cast iron shoe running against a corresponding surface of brass. As this dips in oil it avoids all possibility of galling or taking hold so suddenly as to start the car with a jerk.

Hub brakes are used on the rear wheels and in addition to this the reverse speed

the transmission can be used as a brake, and the gears are built sufficiently strong to stand the full strain if the reverse is thrown in suddenly. The Warner differential is used. Its gear case is oil tight, so that all gears run in oil. The steering gear is of the worm pattern, locking wherever placed. The car has the gasoline and water tank mounted under the seat, which leaves the entire hood for luggage.

The weight of the machine complete with tonneau is 1,200 pounds, and maximum speed 35 miles per hour with the sprockets of the size used for general use.

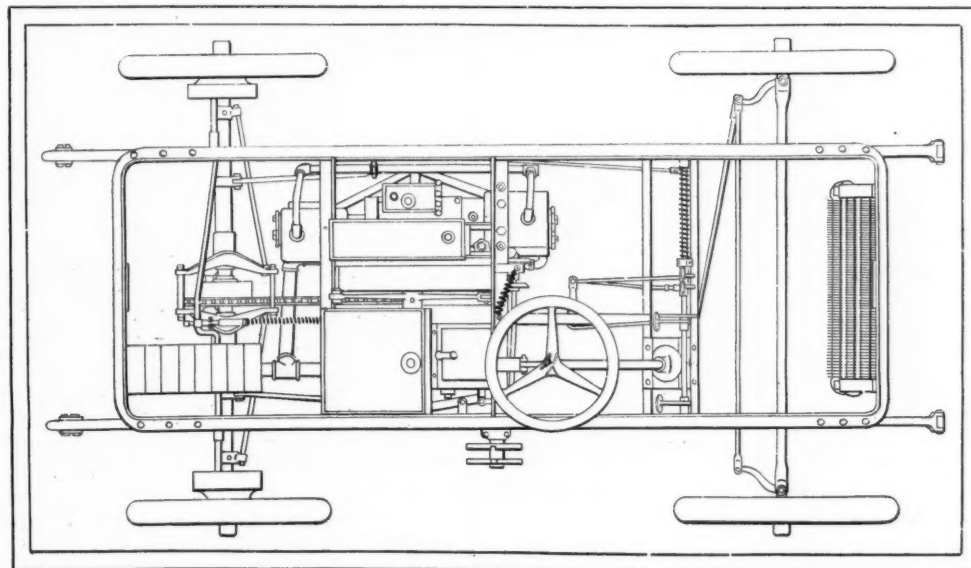
The car is intended for four passengers but five may be easily carried. The tonneau is much larger and more roomy than generally placed on cars of this size, from the back of front seat to the back of tonneau being 36 inches.

The painting is of maroon color and the upholstery is full leather, with the fenders exceptionally large for a car of this size. The car is equipped complete with fenders, lamps, horn and full set of tools.

REMODELED PEERLESS RACER

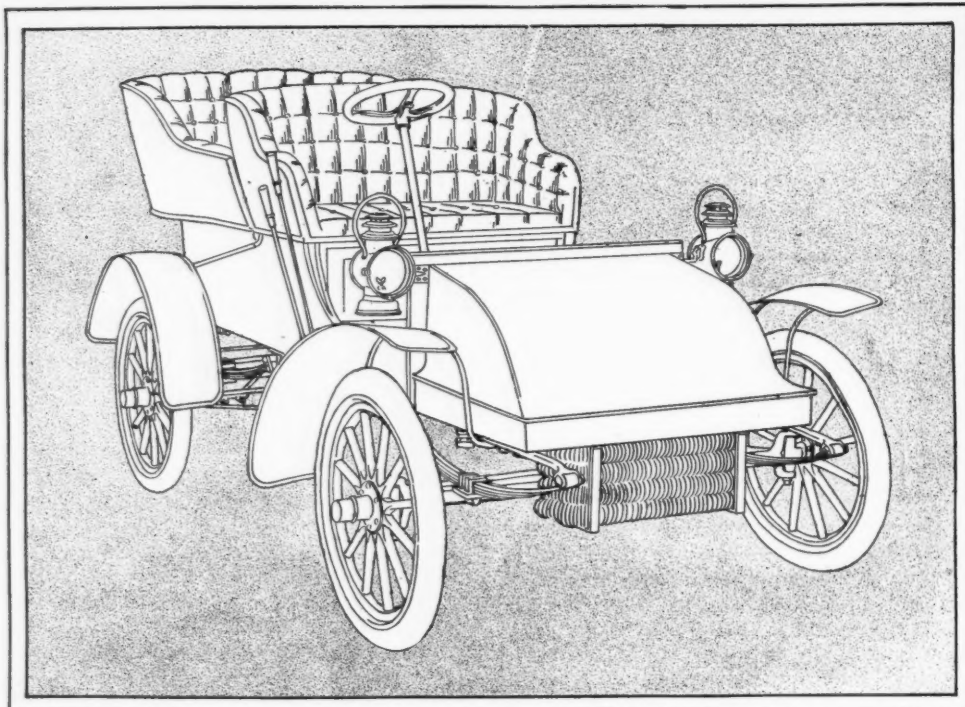
The 80-horsepower Peerless racer used by Louis P. Mooers, of the Peerless Motor Co., of Cleveland, O., in the Gordon Bennett race last summer has been practically rebuilt for the coming season and will probably make its first appearance in its new form at the races to be held at Daytona, Fla., this winter. Mr. Mooers may drive the car himself, and he may not. He has announced that he has retired from racing, but he still has an inclination to demonstrate what the big Peerless car can do, particularly since he believes that the changes recently made have increased the speed of the car.

The car has been fitted with a sheet metal hood of the torpedo shape. The peculiar radiating arrangement is the most noticeable improvement. It consists of two batteries of ¼-inch copper tubes held together by vertical flanges extending entirely around the side of the shell. The radiating pump remains as heretofore and the cooling water is forced forward to a T-shaped union, where it divides and passes through the radiators at the sides. The T is provided with cocks so that the water may be drained from the radiating system. From the copper tubes, the water passes through a similar union in the rear to the water supply tank, which is located under the rear section of the



MOTOR AGE

Plain View of Model Chassis



MOTOR AGE

The Model Tonneau Car

hood. From the tank, the water is sucked forward through the cylinder jackets. All the working parts have been lightened as much as possible and considerable aluminum has been substituted. To make the car adaptable for driving around the city, slow speed and reversing gears have been added.

SPRING SEATS FOR TONNEAUS

There have been many improvements in recent years in both horse-drawn carriages and automobiles, but no one feature of value to the user has shown more apparent utility than the cushion spring manufactured by F. H. Thompson, of Portland, Me. The importance of a comfortable seat, one that will take up the jarring and jolting over rough roads on the long journeys that are incident to automobile riding, has been made apparent to manufacturers during the past season and with the rising popularity of the tonneau a spring cushion seat becomes a necessity. On the spring made by W. Thompson no frame, burlap or webbing is required. The spring is put into the cushion bottom and as it takes the place of the bottom stuffing, there is considerable saving of cost of construction. The cushion has been used for years by high-class carriage makers and has been adopted by several prominent automobile builders for their 1904 output. The spring is practically indestructible and its cost is said to be considerable less than many of the cushions heretofore used.

THE WELCH RADIATOR

Out of the numerous forms of so-called honey-comb radiators that have been put on the market since the introduction of the original in France, there has grown one which is literally honey-comb in so far as the structural formation is concerned, the water tubes being hexagonal to form a true honey-comb unit when assembled. This is the Welch radiator, made by the Chelsea Mfg. Co., Ltd., of Chelsea, Mich.

The radiator is constructed of seamless hexagonal, brass tubing about 5-16-inch in diameter, .013-inch thick and 3 inches long. Each tube has its ends expanded about .05-inch. This expansion allows a water space between the

tubes when they are in position, one above the other, of nearly 1-16-inch. The tubes are securely clamped together in a brass frame and their ends made a solid mass by a dipping process. Each tube furnishes about $2\frac{1}{2}$ square inches of radiating surface, and there are about ten tubes per square inch of radiator face, giving 25 square inches of radiation per square inch of radiator face. The maker says that 220 square inches of radiator face have been found amply sufficient to cool two $4\frac{1}{2}$ -inch by 5-inch cylinders, working under heavy duty at 1,500 revolutions per minute in hot weather, and without a circulating pump. A fan is necessary with this style of radiator in order to keep up the circulation of air when the machine is standing still. It is further said that with a properly designed circulating system, using from 1-inch to $1\frac{1}{2}$ -inch short connections, no pump is necessary, and thermal circulation will keep up in the cooling system, preventing the radiator from freezing in winter until all heat is absorbed from the engine. The small amount of water contained also makes it feasible to draw it out upon leaving the machine for any length of time. Any non-freezing compound can, however, be added to the water the same as in any other cooler. A circulating

pump increases the efficiency slightly, thus allowing a smaller radiator to be used.

The containing cases are made of cast brass in any size and shape desired to contain the hexagonal tube sections. The supporting lugs can be made a part of the cases.

ROLLER BEARING FACTS

Bulletin No. 20, issued by the Hyatt Roller Bearing Co., of Harrison, N. J., describes extensively the construction of the Hyatt roller bearing and shows a number of applications involving heavy duty at slow speed. Tables are given by which bearings may be designed to operate under various loads and letters are reproduced demonstrating what results have been obtained. This bulletin is one of a series which is being issued from time to time, illustrating the classes of work to which the Hyatt bearings are being applied commercially.

CAR WARMING DEVICE

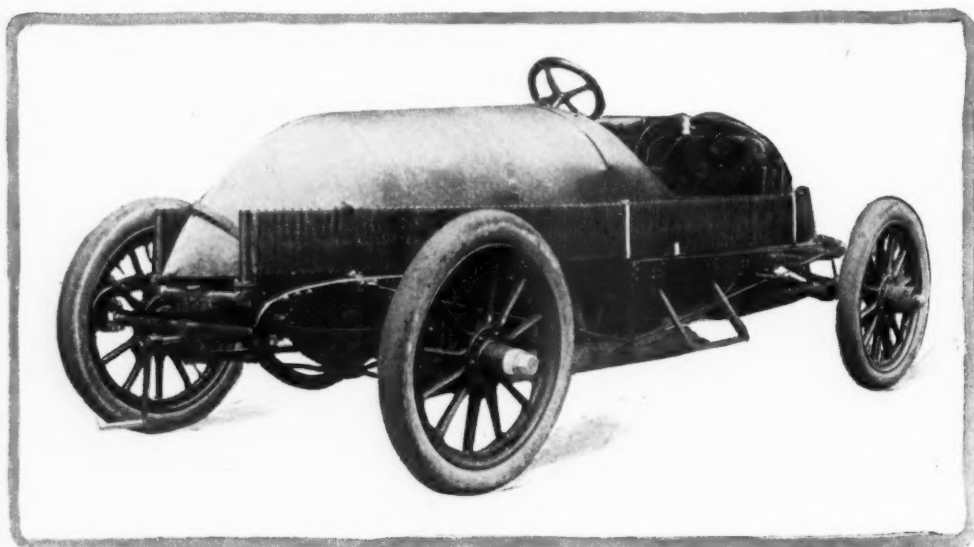
J. M. Padgett, of Topeka, Kan., has improved his Stevens-Duryea car by adding a coil of hose 15 feet long, through which the hot water from the engine passes. By this means he claims to keep the feet and legs warm in the coldest weather. Mr. Padgett has also contrived a tire pump which is run by the engine.

A NEW WHITLOCK COOLER

A number of decided improvements are claimed for its new cooler by the Whitlock Coil Pipe Co., of Hartford, Conn. The construction consists of a series of transversely corrugated tubes, extending between a top and bottom water tank. The corrugations of each tube are reversed with relation to the two tubes adjacent on either side, thus forming air cells running from front to back. The improvement consists in the formation of numerous little points projecting into the air cells, thus increasing the amount of surface. These points are made by drawing out the metal into minute cups, each of which fills with water, separated from the air only by a thin wall of copper, the advantage claimed being in bringing the water and air into intimate contact.

This form of corrugated tube, the company claims, has many advantages, producing a cellular cooler in every sense, and giving the front of a car a neat appearance.

The continuity of the tubes from top to bottom gives strength, and the zigzag course of the water through the narrow flat water spaces brings every particle into contact with the air



MOTOR AGE

The Remodeled Peerless Racer

cooled surface of the cells and insures high efficiency for the cooler, the effect of which has been vastly increased by the addition of the little pointed cups. The cooler is made in two general styles, and there are six stock sizes in each style. The cooler is also furnished with a ball-bearing fan. The Whitlock company has something new in the line of radiators for light runabouts to be brought out soon.

NEW HOLLEY CARBURETER

George M. Holley, of Bradford, Pa., has retired from the Holley Motor Co., of Bradford, Pa., to engage in the manufacture of a carbureter of his conception. The illustration presents a sectional view of Mr. Holley's new carbureter.

The float feed chamber is not of unusual construction. The gasoline enters through an approved form of union and flows past a filter plug and ball valve, passing upward around the valve rod, which is a loose fit in the passage. The flow of gasoline to the float chamber is regulated by a spherical cork float, which is adjusted to raise the ball valve and shut off the supply when the level of gasoline in the chamber is about $\frac{1}{8}$ -inch below the top of the spraying nozzle in the mixing chamber.

The gasoline passes from the float chamber through a screen into the nozzle passage, which is fitted with two sediment screws. The fuel rushes out of the nozzle into a "strangling" tube. Air ports in two diametrically opposite pairs are placed in the wall of the mixing chamber and the air drawn up from the lower ports first picks up the gasoline in the strangling tube and carries it on through, past the throttle above and into the outlet port. Rotary movement of the strangling tube uncovers to a greater or less extent the upper air inlet, giving the auxiliary air supply, by which the grade or richness of the mixture is determined. This rotary movement of the strangling tube is simultaneous with and compelled by the movement of the rotary tubular throttle, the two parts being linked by a depending arm from the throttle engaging a slot in the tube. Consequently as motor speed is increased and the throttle opened the auxiliary air ports are further uncovered and a greater inrush of air occurs. The exact adjustment of the opening or the auxiliary air ports is effected by vertical movement of the strangling tube. This is done by means of an adjusting screw and nut on top of the mixing chamber.

The principal claim made for the carbureter by Mr. Holley is that the relative movements of the throttle and the strangling tube are such that the proportion of air and gasoline in the mixture remains constant, regardless of the speed at which the motor runs.

Thus after the strangling tube has been once set the movement of the single throttle lever accomplishes the entire adjustment of mixture during operation. The carbureter is made in three sizes, having 1, $1\frac{1}{4}$ and $1\frac{1}{2}$ -inch gas outlets respectively and suitable for motors from $1\frac{1}{2}$ up to 40-horsepower.

RIGOROUS SPEED LAWS

The different states of Switzerland are trying to arrive at an understanding in the issuance of a uniform automobile speed law. Fifteen states have given a favorable reply to the committee in charge, five have sent in a conditional acceptance and two have refused to join the others. According to the proposed regulations the speed of automobiles must not exceed 6 kilometers, about $3\frac{3}{4}$ miles, in crowded

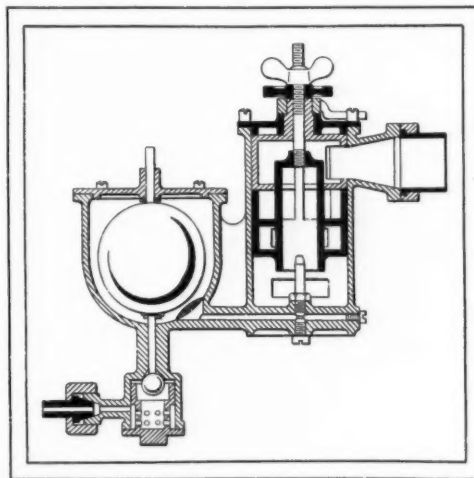
streets, bridges, or in public squares. Ten kilometers—about 6 miles—is the proposed limit in other places. No one may drive an automobile without having been examined by a specialist and pronounced competent. All motor cars must show the car's number and the monogram of the driver's state. No permit to drive a car will be issued unless the car is provided with powerful brakes and lamps. A driver must stop his car whenever a government service car, such as postal or military wagon, is crossing or passing it on the road. Offenders will be liable to heavy fines and imprisonment.

NEW YORK GARAGE NOTES

W. H. Bex, of the H. H. Franklin Mfg. Co., was a visitor at the American Automobile Storage Co. last week.

Clodio & Widmayer have secured agencies for the German Cudells and Adlers, and will shortly announce the location of a salesroom, garage and repair shop.

The Murray Hill Auto Station, 27 East Thirty-fifth street, has been purchased by the Victor Auto Storage Co. It will be conducted under its present name.



MOTOR AGE

The Holley Carbureter

The Ford agents, C. A. Duerr & Co., have changed their firm name to Duerr, Ward & Co., since their removal to their new garage at Fifty-first and Broadway.

A repair shop and garage annex is to be established by the Broadway Automobile Exchange on Fifty-first street, near Broadway, January 1.

Among the local makers and agencies, which Manager Chasseaud says has taken space at the Herald Square show, January 18 to 30, are: American Automobile Storage Co., Franklins and Oldsmobiles; Auto Import Co., various French and German cars; Clodio & Widmayer, Cudells and Adlers; Babcock, Atwood & Brown, Yales, Packards and Babcock electrics; Springer Motor Vehicle Co., Springer.

The firm of Hollender & Tangeman of 5 West Forty-fifth street, which has been appointed sole American agent for the F.I.A.T. cars, is preparing for an active year. Mr. Hollender is now returning from Europe. The new models will be shipped immediately after the close of the Paris show and will be exhibited in Madison Square Garden. Mr. Hollender was last year the Paris agent for the F.I.A.T. and in the heart of the French automobile industry disposed of thirty cars. Mr. Tangeman is a member of the Long Island Automobile Club and has owned a F.I.A.T. car for the past two years. The firm intends to take a 24-horsepower racer, similar to the one which made such a

fine showing in the Paris-Madrid and circuit des Ardennes, to the Florida races in February. They will carry a complete line of parts in their big establishment and promise to prove important factors in the business.

Some recently finished Quinby bodies are attracting much attention at Smith & Mabley's garage. One of them worthy of particular notice is fitted to a 24-horsepower Panhard. The finish is in gray with blue trimmings. The car also has a Quinby top with silver mountings. Manager Brooks says his company has fitted the Page Decauville racer, now the property of B. M. Shanley, Jr., of New York, with a cafe au lait body. The racing form body is preserved, as the car will continue to compete on the track and will be one of the contestants in the Florida tournament.

The following New York makers, dealers and importers are among the visitors to the Paris show: Hart O. Berg, Berg Automobile Co.; F. A. La Roche and C. D. Cook, of the American Darraq Automobile Co.; Messrs. Josephs and Otto, of the Auto Import Co.; Norris M. Mason, of the Societe Franco-Americaine d'Automobile, New York branch; E. T. Bird-sall, of the Standard Automobile Co.; Frank Erland, of A. G. Spalding & Bros.; Sidney B. Bowman and Alexander Fischer; Carlton R. Mabley, of Smith & Mabley, is en route and will arrive in Paris before the show closes.

RECENT INCORPORATIONS

The Montreal & South Shore Auto Car Co., Montreal, Canada; to operate automobiles between Montreal and the South Shore. Capital stock, \$30,000.

The Haynes-Apperson Co., of Kokomo, Ind., has petitioned the secretary of state for permission to increase its capital stock \$100,000.

The Tuxedo Automobile Station, New York: capital stock, \$5,000. Directors, S. C. Craiger, Rutherford, N. J.; Julius Rehwolt and John Westenberg, New York.

The Cushman Motor Co., of Lincoln, Neb., has filed articles of incorporation, increasing the capital stock to \$300,000. Of this amount \$50,000 is to be fully paid up. The company manufactures motors and automobiles.

Roebuck Automobile Co., Brooklyn, N. Y.; to deal in automobiles; capital, \$5,000. Incorporators, George E. Roebuck and William W. Payne.

The Standard Automobile Co., East Liberty, Pa.; capital, \$75,000. Directors, W. N. Murray, Allegheny, Pa.; Robert Pitcairn, Jr., Robert R. Gordon, F. C. Perkins, R. S. Robb, Pittsburgh.

Woolston & Brew, New York, to manufacture automobiles; capital, \$25,000. Incorporators, George F. Woolston, William P. Brew and J. T. Emery.

The Imperial Automobile Co., Detroit, Mich.; capital, \$250,000. Board of managers, Dr. J. B. Book, A. B. McCord, G. J. Worthy and R. O. Adams.

RACING CAR REGULATIONS

The French automobile board of trade decided at a recent meeting not to change the present regulations regarding racing cars, inasmuch as the manufacturers would find it difficult to comply with changes unless given sufficient time. The question will, however, be thoroughly examined at a meeting of the board next February and any changes decided upon will apply on 1905 cars.

MOTOR PATENTS REVIEWED

BEVEL GEAR DRIVE

Letters patent No. 746,027, dated December 8. Louis S. Clarke, of Haverford, Pa.—The invention comprises a rear axle gear incorporating a differential gear and a bevel and spur gear transmission set for transmitting the power from a longitudinal propeller shaft to the rear axle. The differential is housed in the usual manner and carries a spur gear, which meshes with a pinion on a short counter shaft, carried by an extension of the differential gear casing and running on ordinary adjustable ball bearings. On one side of the spur pinion this counter shaft has a bevel pinion, which engages a corresponding pinion on the extremity of the propeller shaft, the latter, of course, extending into the gear housing. This shaft, also, runs on ball bearings. The end of the counter shaft opposite that which carries the bevel pinion projects through its housing and is exteriorly fitted with a brake drum to co-act with a double acting band brake. The principal claim relates to the general arrangement of the driving elements and brake, while several minor claims refer to the construction as specified, the means for adjusting the ball bearings being among such points.

THROTTLED CARBURETER

Letters patent No. 746,449, dated December 8. Patrick H. Brennan, of Syracuse, N. Y.—The carbureter is formed of a float feed chamber made integrally with the mixing chamber. The chief features of the mixing chamber are an inlet valve, controlling the flow of gasoline from the float chamber, and a throttle valve regulating the mixture outlet. The latter is in the form of a vertical tubular valve, with port in one side. The valve actuating lever arms are above the mixing chamber, through the head of which the tubular valve stem projects. The broadest claim is as follows:

"In the carbureter of a gas engine, the combination with an integral brass shell formed with a reservoir, an inlet thereto, a mixing chamber, an inlet channel from the reservoir to the mixing chamber, an air inlet to the mixing chamber, and a vapor outlet therefrom, of a throttle valve having a tubular stem to control the vapor outlet, an inlet valve to control the inlet channel having a threaded stem engaging with said tubular stem, and operating arms and levers connected respectively to said stem."

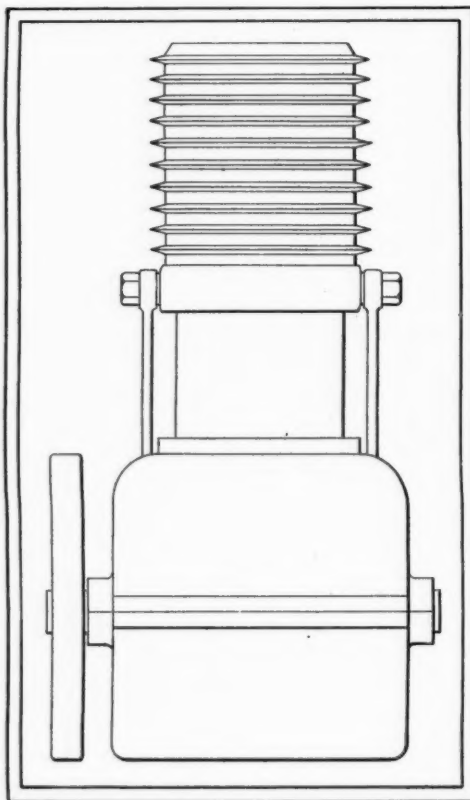
CLUTCH GEAR TRANSMISSION

Letters patent No. 746,216, dated December 8. George E. Whiteside, of Wilson, N. Y.; assignor to Harry Highland, of Niagara Falls, N. Y.—This system of transmission comprises, roughly, a counter shaft with variable speed sets of spur gears between it and a driven shaft which, for the purpose, may be taken as the rear axle of the vehicle. The counter shaft gears are loosely mounted and annular shifting clutches are arranged, one on the driven shaft and two concentric ones on the counter shaft to secure either the high or the low speed or the reverse drive set of gears for driving. The counter shaft clutches are operated by sliding the shaft, which is accomplished by means of a manually operated worm in one end of

the casing. A similar worm operates the driven shaft clutch directly. As shown in the specification drawings the group also includes a spur gear differential in the driven shaft section of the casing.

FIXED PISTON MOTOR

Letters patent No. 746,212, dated December 8. William C. Weatherholt, of Columbus, O.—The invention is a readaptation of an old scheme to obviate the reciprocating piston in an internal combustion motor. The piston is fixed to the crank case and slidably mounted upon it is a band diametrically opposite, upon which are ordinary wrist pins to permit the attachment of connecting rods in engagement with the crank shaft, the crank pins of which are, of necessity, in line with each other. Removably and adjustably attached to the piston band is a



MOTOR AGE

Letters Patent No. 746,212

reciprocating piston. The attachment of the cylinder is by screw threads, this adjustable means of fastening being provided that the compression space between the piston and cylinder head may be varied. The necessary ports and valves for the passage of the gases in their regular cycles are supposed to be in the piston head, and the valves are to be operated by means within the crank case.

SPRAY CARBURETER

Letters patent No. 746,119, dated December 8. Fernand and Georges Longuemare, of Paris, France—This patent relates to the construction of the new form of the well known Longuemare carbureter, in which the carbureting chamber is surrounded with a heating jacket. The general arrangement of the parts of the carbureting chamber are essentially the same as in the regular Longuemare as used in this country. The principal claim is as follows:

"A carbureter for explosive motors and the like comprising a combustible charge inlet pipe, an air inlet and mixing sleeve surrounding said pipe, said sleeve having an upper cylindrical portion which surrounds, in close proximity, the upper part of the charge inlet device and extends beyond the same, a needle valve having a perforated disk on the upper part of its spindle and cooperating with a port to effect and control the supply of charge, and an adjustable conical abutment in the path of said spindle to limit the upward movement of the same."

DOUBLE CHAMBER MUFFLER

Letters patent No. 746,527, dated December 8. Arthur Krebs, of Paris, France; assignor to Panhard & Levassor, of Paris, France—The principal feature of the muffler comprising this invention is its division into two compartments forming respectively a primary and a secondary expansion chamber. The muffler casing, which is of the usual cylindrical form, is cut into the equal compartments by a solid partition, and passage for the gases from one chamber to the other is had through a short cylinder or tube, open at one end and closed at the other, and with its wall pierced by a multiplicity of holes. The gases rush into this headed tube from one chamber and escape into the other through the small holes. The final outlet is through a single large hole. The wall or casing of the muffler is of the composite structure to deaden the noise of the exhaust passing through the muffler. The outermost wall is of metal. Inside this is a thickness of asbestos, and within this a layer of wire gauze, the three layers being fastened together by rivets.

POPPET VALVE STEAM ENGINE

Letters patent No. 746,626, dated December 8. William Dieter, of New York—While not particularly specified as such it is probable that this steam engine is intended especially for such use as that of automobile propulsion. It is a vertical, single acting engine designed on the lines of an internal combustion engine with enclosed crank case and trunk piston. At the side of the cylinder head is a double valve chamber with two poppet valves, one above the other. The upper is the steam inlet valve and the lower the exhaust valve. The exhaust valve is actuated by a tubular valve stem lifted by the usual gear driven cam arrangement. Within this valve stem is the stem of the steam inlet valve. The mechanism is such that the valves are lifted alternately. The common valve chamber leads by a cross channel to the cylinder. Surrounding the exhaust valve stem is an exhaust steam chamber cast integrally with the cylinder and in open connection with an annular exhaust steam chamber lower down on the cylinder, connecting with it by ports such as those in a two-cycle internal combustion motor and placed to be controlled by the reciprocating movement of the trunk piston.

CUP RACE EXCURSIONS

The Automobile Club of France and L'Auto are arranging excursions for the Gordon Bennett race. To avoid possible misunderstanding and similarity in the plans, it was decided that the excursion of the club should be reserved exclusively to its members, and last about 2 weeks. The Auto's caravan is open to members of all clubs recognized by the Automobile Club of France. The routes will very likely be different and the starts given at separate dates.

AUXILIARY MACHINERY OF STEAM CARS

Of the auxiliary machinery of a motor car there is no part that will better repay care and attention than the lubricating apparatus. A liberal supply of oil or grease delivered at the proper time to the right bearing ensures ease of running and freedom from wear.

The best method of lubrication is that which, while reliable, requires the least attention on the part of the driver. A lubricator consists primarily of a vessel to hold oil or grease and a means of conveying it to the bearing. The familiar oil can is probably the crudest form in use today.

In practice the lubricant may be supplied in two ways. One is drop by drop as in the common oil cup, which may be placed directly over the bearing, or, if the latter is inaccessible, the cup may be placed where convenient and the oil led to the bearing by a pipe. In this case care should be taken to have the pipes large enough not to clog easily and to avoid sharp bends which would prevent running a wire through the pipe occasionally to keep it clear. A second way is to supply the bearings by the splashing of the parts in an oil bath or by pumping a continuous stream of oil through the bearings, collecting and straining it and then pumping it through again. To use either of these methods requires that the parts be so enclosed that the oil can be saved after passing through the bearing.

The mechanical method has the further advantage of keeping the bearings clean, as the continual stream of oil prevents dirt or grit from lodging and is also economical as to quantity used. It acts independently of the driver and starts and stops with the engine.

There is one disadvantage in splash lubrication—that any dirt or grit in the splash chamber is held in suspension by the constant churning of the oil and given no chance to settle. The plan of supplying the oil to the different bearings under pressure is therefore the better.

Lubrication by grease is becoming popular, and justly so. It is in a way automatic, as the warmer the bearing grows the faster the grease feeds.

For the inside of the cylinder, steam cylinder oil must be used; for the other parts a good medium-weight oil, such as lard oil, is as good as any. For ball and roller bearings in the wheels and axles vaseline or a good grease mixed with a little graphite will prove satisfactory. For chains a good cleaning, followed by soaking in hot grease and graphite, is conducive to quiet running. In lubrication as in many other things in life, individual preference affects results or there would be no market for most of the 800-odd different brands of lubricating oil now on the market.

Use plenty of oil, but keep the excess wiped off, so that dust and dirt will not collect, and when you have a bearing to oil that only takes a few drops, put the nose of the oil can in the oil hole and press gently till filled. Don't hold it two or three inches away and squirt all over everything in sight.

Liquid fuels are at present in universal use on steam motor cars for pleasure use. They raise no dust, do not or at least should not smoke, and produce no ashes. They occupy less space than solid fuels and are more easily handled. Their disadvantage is high cost and ability, not liability, to explode. All liquid fuels are changed into a vapor form before being burned. This may be done by heating or by atomizing. By heating, a gas is formed; by atomizing, a fine mist or spray. Most burners on the market today belong to the heating class.

In this country gasoline and kerosene are the two forms of liquid fuel adapted to motor car work. Of these gasoline is the most popular. It is cleaner to handle and easier to burn and requires less care.

There are, however, several successful kerosene burners on the market, and the steadily rising price of gasoline, added to the greater safety of kerosene, are powerful factors in stimulating the development of this type of burner. Another factor is that kerosene may be found at every country store and in most every house.

All burners should be fitted with pilot lights or starters. These are in reality a small burner where the heat necessary to vaporize the fuel is produced by a few drops of alcohol or gasoline and, when started, they in turn supply the heat to warm the main burner. Also during stops when the main

burner is shut off they keep it hot and ready for use.

One strong argument in favor of liquid fuels on cars is the ease with which they may be controlled by automatic regulators. Before considering these, a word on the general lay-out of the driving machinery.

The machinery of steam motor cars may be separated into three divisions: The steam line, the water line, and the fuel line.

In case of any trouble take the line where you think the trouble lies and follow it through from one end to the other, then if you still are at sea take the other lines in their turn. Don't skip all over the car looking first on one line and then on another. You may, if lucky, hit the right spot and in individual cases save time, but in the long run the other way is the safest and shortest and will often prevent future troubles.

The steam line has the throttle valves, of which there should always be two, the main throttle by which the car is controlled and the auxiliary valve close to the boiler by which the steam can be shut off from the main valve and the piping. If a condenser is fitted the condenser pump and grease separator would properly come under this division.

The water line starts at the water tank and passes through hand and power feed pumps, feed regulators and heaters to the boiler.

The fuel line starts at the fuel tank and runs through the fuel pumps where fitted, regulators and vaporizers to the burner. The air pressure mechanism comes properly under this heading.

The genus homo is not infallible, neither are the best of automatic appliances. To make up for the lapses of both, numerous safety devices and alarms have been devised. Of the latter the two most prominent are the safety valve and the fusible plug.

The name of the former explains itself. When the steam pressure rises beyond the determined point, the valve, which is held closed on its seat by a spring, opens and lets the steam out into the air.

The fusible plug is the preventer of damage by low water. It consists of a brass plug which has a hole running through it from end to end. This hole is filled with an alloy of lead that will not melt so long as it is covered with and kept comparatively cool by water. If, however, the water be removed, the plug will heat to a point where the alloy melts and the steam blows out and gives warning of low water. The plug should be so placed in the boiler as to give its warning before all the water has been evaporated. It should be located in some part of the furnace where it will be subject to great heat without being in actual contact with the flame. In flash and semi-flash boilers it is unnecessary, as these boilers from their build are not affected by an absence of water. In most water tube boilers it can be omitted, but in those having large drums partly filled with water it should be used.

Under the head of alarms, those referring to the height of the water in fire tube boilers are the most important.

There are two general methods of construction. In the first a float is used so connected with a small steam whistle that as long as the water level is above the danger line the float keeps the whistle valve closed, but should the water level fall, the weight of the float falling with it opens the valve and lets the steam blow the whistle. Another form of this same type instead of blowing a whistle sends up a jet of steam in front of the driver.

The other method depends upon the different temperatures of steam and water when away from the boiler. It consists essentially of a small tank connected with both the steam and water levels of the boiler, and containing a bulb of mercury and the points of two electric wires. When the water is above the danger level the bulb is covered and kept cool; when the water sinks the bulb is exposed to the heat of the steam, the mercury in the bulb expands and joining the two wires rings an electric bell. These alarms, as the fusible plugs, are only necessary on boilers where the loss of water means disaster.

All pumps are either hand pumps or power

pumps, or as hand pumps might be driven by the feet perhaps it is better to say pumps driven by the muscular energy of the operator or by the power of machinery.

Power pumps may be driven from some moving part of the engine, when they are usually called direct connected; by gearing from some shaft, then called geared pumps, or by a steam cylinder of their own, when they are called independent feed, air or gasoline pumps, as the case may be.

In current practice hand pumps are supplied as a reserve or for use when the carriage is not under steam; power pumps for regular use when under steam, and independent pumps either as an additional precaution against break-down of the usual power pumps or to perform services which are only required at intervals but are too heavy for hand power. Under this head would come pumping the pressure in the fuel tank, as arranged in some cars.

The most important pump on the car is the feed pump. On the conscientious working of this member depends the progress of the car and the comfort and pleasure of the operator.

The usual practice is to drive this pump from the crosshead of the engine, so that it makes a stroke for every stroke of the engine. In the dark ages of engine design, when this method was first employed, it worked very well. The stroke was long and the number of strokes per minute few, but when the number of revolutions began to rise troubles began and with the present speeds and short strokes the direct connected feed pump is the greatest nuisance on the car.

A far better plan where the construction of the car will allow it, is to drive the pump by gearing from some shaft or axle and by suitably proportioning the gearing a slow speed and long stroke may be given and much if not all the trouble avoided. Independent steam feed pumps while very convenient if the power pump gives out, are very large steam users and for that reason are not recommended for the regular water supply.

The feed pump is of course part of the water line. Where a condenser is used a pump is needed to pump the water from the condenser to the main tank through the grease filter. The remarks as to driving of feed pumps apply here, but with less force, as there is no pressure to overcome. The ejector, which is fitted in some carriages, is for filling the water tank from some outside source. It works on the same general principle as the familiar cologne atomizer.

Turning now to the fuel line, the problem has many ways of solution. Liquid fuel burners in present practice require their fuel under considerable pressure, varying from 30 to 80 pounds. The earlier method of providing this pressure was to pump air into the main fuel tank until the required pressure was obtained. This method is still used by many makers, but is open to objections.

The whole body of fuel is under pressure, and any leak or break in tank or piping emits a stream of gasoline or kerosene under greater pressure than found in the average water faucet. The possibilities of this stream and the lighted burner are many. In practice very few accidents happen, but as it can be easily avoided the carrying of the whole fuel supply under pressure should be emphatically condemned. The only reason that can be quoted in its favor is that the air pressure can be pumped up at intervals and so avoid having an air or fuel pump under continuous operation.

The other method of supplying the fuel, which is used by several makers and is gaining in favor, is to have a power fuel pump similar to the feed pump and which at every stroke pumps a small amount of fuel into a small pressure tank holding from a half pint to a quart and thence to the burner. This system needs a bypass on the fuel line to take care of surplus fuel when the burner is shut down. There is one ingenious fuel pump on the market that acts automatically and stops pumping when the required pressure in the fuel line is reached, thus avoiding the use of a bypass valve.

Regulating valves as used in steam motor car work are actuated by either pressure or temperature. When by temperature they are known as thermostats and are used to shut off the fuel supply on flash and semi-flash boilers.

EDITOR'S NOTE—This is the fourth of the lectures by P. H. Kemble before the Automobile School of the Boston Y. M. C. A.

THE CARE OF A STEAM CAR

To insure the maximum efficiency of the water tube type of boiler a certain amount of care is necessary. When first firing up and your steam gauge begins to show a pressure, open the blow-off valve and let a small quantity of water be discharged through the same. When the water begins to boil, the sediment, which is settled on the bottom of the boiler, is disturbed and begins to rise. By means of the blow-off valve you can take out more of the impurities at that time than at any other.

When steam reaches 50 or 60 pounds this sediment settles back and is not easily disturbed. If these impurities are allowed to remain on the bottom of the boiler, they form a non-conducting hard scale, covering the plates and lower ends of the tubes, which interferes with rapid steaming and in addition removes the protection of the water directly in contact with the flame.

This cleansing of the boiler removes to some extent the liability of burning it, as this is too often caused by sediment clogging the circulating system, which includes the check valves on the water column or gauge glass.

The water in the gauge should fluctuate with the motion of the carriage, and when found to remain stationary it is an indication of clogging. This can be remedied by tapping the checks and opening the water column gauge until the sediment is cleaned out. The sole indication of the amount of water in the boiler is the water in the gauge, and it is absolutely necessary that the operator be sure of perfect circulation.

To be sure of uniform steaming capacity, the fire must be able to meet the varying demands. This regulation is commonly secured by the so-called automatic, which consists of a needle valve actuated by the steam pressure on a diaphragm, the valve closing as the pressure increases to some set point and shutting off the fuel supply. Care should be taken that the packing of this valve is neither too tight nor too loose, as in the former case it fails to work promptly, and in the latter is liable to leak and thus destroy the whole efficiency. Another source of trouble is the cracking or breaking of the diaphragm, which should be at once replaced.

The gasoline system should be washed out occasionally in the following manner: Open the torch valve and let a small quantity of cold gasoline through under high pressure. This will soften and remove a portion of the scale and grit and thus prolong a free flow of gasoline. The jet valve on the automatic should be cleaned out from time to time. This may be done by unscrewing the jet valve spindle and removing the small plug opposite the jet nozzle. Take a small piece of wire and clean the scale out thoroughly, as when the jet becomes in any way plugged it interferes with the air mixture, does not produce a good fire and sometimes causes the burner to fire back.

There are several ways now in use by the different makers, any one of which is good if it is so arranged as to vaporize fast or slow, as may be required. This is very essential, as the gasoline may be consumed in a hot retort while the boiler is not making much steam, causing a waste of fuel; and to force it through a retort that does not vaporize properly crowds an imperfect mixture into the burner and also wastes fuel. Perfect vaporization, perfect mixture produces economy in fuel.

The type of steam engine commonly used necessitates proper lubrication of all moving parts. This lubrication is divided into two sections: One where the steam is in direct contact with the movable parts. For this a special grade of oil is essential, one that will not burn or be disintegrated by the heat. Only enough oil should be fed to form a mixture with the steam and keep surfaces coated. The engine should start easily and without undue grinding or squeaking. In the other the external parts and the oil distributed to these parts should be of a consistency to prevent its quickly running off. It is not necessary to have oil dripping from every portion of the engine, a little will perform the same work and there will be no waste. Cleanliness is to be strictly observed, and the engine should be washed from time to time with kerosene to remove the extra oil and grit.

Before starting a car, after steam is up, the operator should open the throttle slightly and move the carriage slowly backward and forward.

This will warm up the engine and drive out the water formed in the cylinders by condensation. This is very necessary, as the pressure of the steam acting on the water (which is incompressible) will often cause bursting of cylinder heads, stripping of bolts, bending or breaking of connecting rods, blowing out of piston packings and generally creating havoc in the movable parts.

These same results are sometimes caused by too much water in the boiler, so that instead of steam being fed the engine, water boils over and enters the engine. This is evident from the blowing sound of exhaust, and the diminution of power, and is commonly called priming.

The operator should from time to time jack up the rear wheels of his car and run the engine slowly, closely watching the action of the various parts of the engine. All reciprocating parts should be kept in adjustment and a trial as above mentioned will permit of accurately locating needed adjustments. The pumps and check valve can be thus tested. Check valves should be reground from time to time. This can be determined by an examination of the valve faces, which should be smooth and bright.

All steam cars should be equipped with an auxiliary water pump, and I recommend that this be directly connected with the boiler, as you will have two separate ways of putting water into the same.

All running gears that are driven from a compensating gear in the center are more or less weak at that point, and the great amount of strain on them is apt to throw the gears out of alignment and cause the car to run hard. I strongly recommend the crank shaft drive, with chains running direct to the sprockets on rear wheels, as this will allow a solid axle and very much strengthen the rear frame.

There are three separate ways now in use in steam cars for connecting power to the rear frame. We have the bevel gear, direct connection with engine, and chain drive. It has been conceded by experts that a chain is the most economical way of transmitting power from the engine to the rear compensating gear and is the easiest to adjust. By carrying master links you can always make repairs that will allow you to proceed.

There are as many different kinds of burners in use as there are different makes of cars. No doubt each manufacturer thinks he has the best on the market. The steel tubular burner, which is extensively used, has given good satisfaction and has been quite long lived. The burner is often blamed for inefficiency when the trouble is really in the air mixture and fuel feed, and often a poor burner is benefited by some means of covering it or giving it more air as the case may require.

When the burner fires back the cause may be traced to various reasons—sometimes the mixing tube is not properly adjusted or the jet valve is not in the right position. This can only be ascertained by trying the different ways to discover the cause.

There are various kinds of torches and generators now used in firing up steam cars, and opinions differ as to the merits of these appliances. I have used nearly everything known to the trade, and as in a great many other things I have gone back to the old methods and use the hair pin torch as a stand-by, as it is always easy to adjust and a sure way of getting a ready vapor.

My experience failed to teach me any easy way of repairing a boiler on the road. I have heard of such things as putting oat meal or some cereal in the boiler to find the leak and stop it from the inside, but I do not consider it advisable to do this, as it is almost impossible to get these substances out again.

We have heard of people making quick repairs in caulking boilers with some other parts of the car which seem incredible. If you wish to fix a burned boiler my advice would be to carry along proper expanding tools with hammer and other fixtures.

The easiest way to do this would be to stand the carriage on end, letting it rest on the rear springs, then remove burner. If the burn is slight, you may be saved the trouble of removing the top hood and simply caulking the bottom. After do-

ing this you can tell whether or not it is tight by using your hand water pump and filling boiler with water, pumping it until the steam gauge shows pressure of about 300 pounds, and if it will remain at this point you can conclude that your boiler is tight. Unless you are an expert in this work, however, I should strongly advise you to notify a machinist and have him take the car to a repair shop and do the work properly.

There are many things that might happen to an engine that could be overcome temporarily and allow you to get to some repair shop. You have two entirely separate engines and there are times when it is possible to disconnect one and run on the other. For instance, if you have broken the connecting rod of your engine, you can, by disconnecting the small rod that joins the links with the bell hanging crank, center your engine by having the eccentrics throw the link square across the engine, having the link block in the center. Then whittle a piece of wood to fit in the link on either side of the block. At this position the ports will be closed in the cylinder. In starting your engine the link will act as a walking beam and will not move the valve stem enough to uncover the ports. This way has been demonstrated by experts as being perfectly safe.

The other way is to disconnect the eccentrics and tie them up in such a manner that they will not entangle themselves in the engine. Then see that the valve slides cover the ports and block the stem so that it will keep in position. This will have the same result as the other way. Start the steam and you will find that you can get under way with one engine. Before starting the engine be sure you have removed the broken connecting rod to prevent it from being entangled in the engine, as the crank will move the same as before.

When a boiler is not to be used for some time, all water should be drawn off and it is then advisable to take a small quantity of sal soda—about a cupful—dissolve it in warm water and pump this into the boiler. Then fill the boiler nearly full of clean water, start a slow fire, and gradually bring the water to the boiling point and continue for about ten minutes. Turn out the fire and blow off the boiler until dry. This leaves a coating which prevents further rust and thus prolongs the life of the boiler.

The water system should be carefully drained. This can be done by opening the valve at the bottom of the water column and the small pet cock which is usually placed below the pumps. If the car is equipped with steam water pumps, great care should be taken that they are thoroughly drained and oil worked into the cylinders and valves. I would strongly advise disconnecting these pumps and putting them in a dry place, as the mechanism is very delicate and requires careful attention in order to get good results. It is also advisable to cover all pickle parts with vaseline. The engine should be cleaned and well oiled.

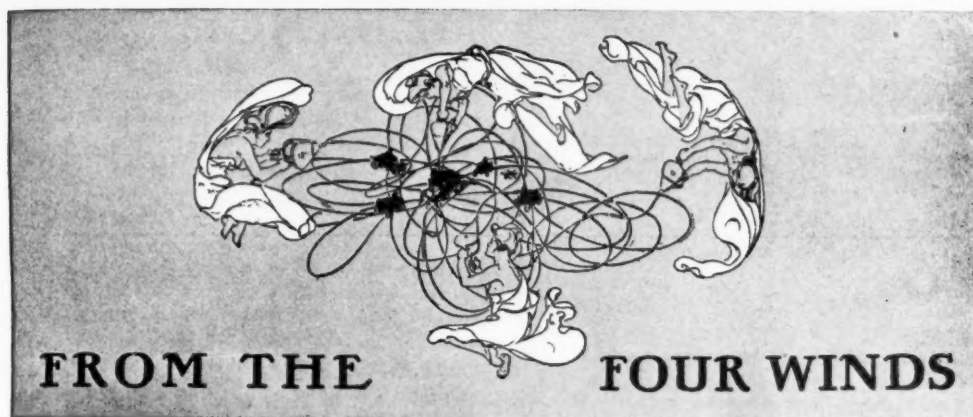
It will pay to remove the steam chest cover and see that it is dried and well oiled. It is well to put trestles under your car to keep the weight off the tires and will prove to be of great benefit to them.

If a car is left in this condition you will find it in good order in the spring. When the car is to be used again it should be fired up and blown off before beginning to use it regularly, as otherwise the deposits of soda will cause foaming in the boiler, incorrect registration in the gauge and priming through the engine.

PRESIDENT IS FOR GOOD ROADS

WASHINGTON, D. C., Dec. 14.—In his annual message to congress President Roosevelt mentions the importance of good roads. In a paragraph regarding the rural free delivery service, he says: "It is unhealthy and undesirable for the cities to grow at the expense of the country; and rural free delivery is not only a good thing in itself, but is good because it is one of the causes which check this unwholesome tendency toward the urban concentration of our population at the expense of the country districts. It is for the same reason that we sympathize with and approve of the policy of building good roads. The movement for good roads is one fraught with the greatest benefit to the country districts."

EDITOR'S NOTE—This is the fifth in the series of lectures before the Automobile School of the Boston Y. M. C. A., and was delivered by J. H. McAlman.



SETTLED FOR A TENTH

Syracuse, N. Y., Dec. 15—The action against Stephen B. Dayan which was tried in County court here last week is an example of what automobilists may expect under the present jury system. Mr. Dayan was the defendant in five suits of \$2,000 in each case on the charge that he frightened a horse driven by Lawrence W. Myers on a trip to South Bay. It was claimed that he would not stop his machine at the lifting of a hand, as provided by the Bailey law, and that the whole party, consisting of five persons, was thrown into the ditch by a frightened horse and all were more or less seriously injured. Each brought suit against Mr. Dayan.

Henry Walters was the attorney for Mr. Dayan. He is also the attorney for the Syracuse Automobile Club, and although the club did not help defend the actions, every member was interested. After having exhausted all of his peremptory challenges in the hope of getting a jury which was not composed of farmers, he was obliged to take up with a jury composed of eleven farmers and a harness maker. The other side made out a good case, and after it had been presented the defense decided to make a settlement, as in all probability it could get no satisfaction out of the farmers, let alone a harness maker. The five cases were settled for about \$1,000.

The plaintiff swore the machine made so much noise he could hear it almost as soon as he could see it; that he waved his hand to stop and shouted, but the machine came on with no check in speed. The horses pranced and went into the ditch, dragging the carriage and throwing the occupants out. The plaintiff was asked how fast the machine was going.

"Considerably faster than I can run," was the reply.

"How fast is that?"

"Over twenty miles an hour."

The decision to settle the cases was undoubtedly a wise one as far as Mr. Dayan is concerned, as, even if he had won the first, all five cases would have been tried and would have put him to great expense. Automobilists are afraid, however, that the settlement will have a bad effect.

HAD THE FIRST WINTON

The Winton Motor Carriage Co. is in receipt of a most interesting letter from Robert Allison, of Port Carbon, Pa., who has the distinction of having owned the first Winton ever sold. The writer relates his experiences with the several Wintons he has owned. In part the letter is as follows: "Thinking you might be interested in my experience with the Winton, I have dotted down a few of the many incidents that I have experienced in the five and a half years I have been running Wintons. Along in 1896-7, and the early months of 1898, I was

in correspondence with a number of automobile builders, but on talking business, none of them was prepared to give me a carriage guaranteed to run. Early in 1898 the Winton people notified me that they were ready to place their carriage on the market. Some time in March of that year I visited Cleveland and found the Winton company about finishing three or four carriages. One of the officers had taken a carriage and Mr. Winton had one on the streets demonstrating. After taking several rides with Mr. Winton, I found the machine would mope, and I gave the company an order to ship me a carriage as soon as it could be finished, this being the first order on its books. Before leaving Cleveland, Mr. Brown, secretary of the company, asked me to send a written order, as there was to be a meeting of the company in a few days, and he wanted to show the stockholders that a sale had been made. The car was delivered April 14, 1898, and Mr. Winton came on himself to give instructions about running. The weather and roads were bad, so we had little chance for handling the car, and although I am a steam engineer of large experience, I knew absolutely nothing about a gas engine. This I soon found out, and had many troubles and stops on the road. I was afraid to attempt any long trips, but on September 29, with Mrs. Allison, started to Philadelphia, 95 miles. I had several breakdowns on the trip, but finally reached Philadelphia October 1.

"While in Reading the car was an object of great curiosity, and when I would stop it would be surrounded by an immense crowd in a few minutes. We spent three weeks on this trip and did not see a single automobile. We spent two weeks in Philadelphia and did not see a car. What a change has taken place in the five years! I have just returned to Reading, Philadelphia and Atlantic City, and find the roads and streets full of autos, and they attract little attention.

"In the spring of 1901 I made an arrangement with the Winton company to take my old 1898 car and put it in the factory as a curiosity, being the first car that went into the hands of a customer—I saw this car on a recent visit to the factory—and I received one of the company's 1901 phaetons. This car I still have and I am using it as a runabout. In this connection, I wish to state a fact that shows what a Winton car will do with reasonable care and attention. I started to use this car April 15, 1901, and kept an account of all expenses up to September 28, 1902. The record shows that I spent for gasoline, oil, repairs and renewals of all kinds, just \$43.20. This does not include repairs and other adjustments made by myself in the barn. The car ran 2,500 miles over our rough mountain roads during this time, a rec-

ord, I think, hard to beat. On June 2 of this year I received one of the 20-horsepower touring cars, and with my wife and Mr. and Mrs. Mills, of Pottsville, I made the run from Reading to Port Carbon, by way of Reading and Pine Grove, 76 miles, over some of the worst roads I have seen, without a hitch. Up to date I have run this car some 1,600 miles without a break of any kind. I have had some trouble, but this we expect. August 11 we made up a party of eleven to make a trip to Water Gap, Delaware. There were two steam and two gasoline cars. I had five passengers in my Winton. We made the run of 73 miles in good time, except the other gasoline car, which was about three hours behind in reaching the gap.

"On our return we took in Easton, Allentown, Kutztown and Hamburg, 100 miles to Port Carbon. The other gasoline car spent the night on the road. One of the steamers spent the night at Bethlehem, and one steamer and the big Winton at Allentown. On this trip I made the run of 173 miles without having to leave my seat on the road. Both steam cars had breaks and the other gasoline rig did not reach home until nearly four days. On our recent trip to Philadelphia and Atlantic City, I ran the car 517 miles without a hitch or a skip."

SECOND-HAND SALES

The long list of second-hand automobiles offered for sale through the columns of the trade and daily papers may cause unknowing persons to think that there is something wrong with the machines and that the owners wish to dispose of them for this reason. This is not necessarily the case at all. In nearly every instance the owner of the car wishes to sell in order that he may buy a new model, or perhaps a larger car. After learning to operate a small machine, the desire for a heavier and later model grows on the motorist, and the old car is often disposed of at a sacrifice. Beginners will thus oftentimes find bargains in the second-hand stores.

In New York city alone perhaps 3,000 automobiles have changed hands the past year. The majority of these have been small cars of American make, costing when new from \$650 to \$1,000 and selling at second-hand for from \$150 to \$800. Some touring cars sell for 60 to 80 per cent of the list price, depending to a great extent on the care which has been given them.

Second-hand foreign cars bring better prices, as the demand for them is greater. The standard machines sell for 70 to 80 per cent of the list price. A machine that has been in use for two seasons will sell for about one-half of the original price if it is in good condition.

Gasoline cars are more in demand than electric or steam cars. The many recent improvements made in steamers and electrics cause the purchaser to ask for the latest model and consequently he goes direct to the agent for a new machine. Electric stanhopes and runabouts are asked for by physicians, and a good car will bring about one-half price at the second-hand store.

While a guarantee is not usually given with a second-hand car, the purchaser who goes to a reliable dealer need have no fear of being imposed upon. Many manufacturers take old models of their cars in exchange as part payment on a new car, and these are overhauled and made almost as good as new. These cars answer the purpose of the beginner, who the following year will be ready to buy a new machine.

MOTORING

Barney Oldfield is reported to have written to friends that he made \$6,000 on his Pacific coast trip.

James Gordon Bennett, donor of the Gordon Bennett cup, has been invited to be the guest of Emperor William next year during the international race.

The first carload of automobile lamps ever shipped was sent last week to the Winton Motor Carriage Co., of Cleveland, O., by Gray & Davis, of Amesbury, Mass.

Secretary Gillette and Director Pardington, of the American Automobile Association, are in charge of the Harlan W. Whipple boom for the presidency of the association.

A. Massenat, manager of the Panhard-Levasor American branch, has written Rene de Knyff, urging him to bring over a Panhard racer and compete in the Florida trials.

George Wilson, deputy commissioner of Uganda, Africa, is taking a 25-horsepower automobile from England, with which he will make a tour of inspection of that country.

Henri Fournier will compete in the elimination trials for places on the French team in the international cup races and will drive a Hotchkiss, which he is now exploiting at the Paris show.

A light steam Locomobile runabout finished third in the automobile run from Philadelphia to Phoenixville, Pa., and return last week. The driver was unfortunate in missing the road and thus lost considerable time.

In the British reliability trials last month, the Oldsmobile was awarded first and second prizes, gold and silver medals, for the best performances in its class.

F. R. Dorman, of New York, is now connected with the Pacific Motor Car Co., of San Francisco, Cal. The company has also contracted with George Sooner, of Cleveland, O., to take charge of its machine shops.

New York friends of S. F. Edge have received letters from him stating that an illness which keeps him at home at present may prevent his proposed visit to the American shows and participation in the Florida races.

"Equipped with patterns to fit all cars," is the claim of the George R. Taylor Co., of Springfield, Mass., in its new catalogue of baskets and hampers for the automobile and coach, which are made in handwrought wicker.

Carl G. Fisher, of Indianapolis, Ind., and Roy D. Chapin, of Detroit, Mich., have sold their entire interests in the Automobile Equipment Co., of Detroit, to P. E. Hawley and J. S. Jennings, Jr., who will conduct the business as heretofore. The principal articles of manufacture are waterproof rain coverings and chain guards.

The road commissioners of Lincoln, Ill., have finished about 3½ miles of gravel road leading west and south from that town. The total cost of this roadway was \$700, which expense was



How E. F. Confarr, of Livingston, Mont., Goes Duck Hunting in His Oldsmobile—Special "Tonneau" for the Dog

paid by the landowners along the route. Part or the cost was paid by labor, the farmers subscribing a certain number of days' hauling of gravel, and for each day they were allowed \$2.50.

The Brushy Neck school district, near Westhampton, L. I., has adopted the automobile as a conveyance to carry the children to school. The teacher makes the rounds in the morning, collecting the pupils, and in the evening returns them to their homes.

Several well known after dinner speakers have been secured by Capt. Homer W. Hedge, chairman of the A. C. A. house committee, who is in charge of the arrangements for the club's annual banquet at the Waldorf-Astoria on Saturday, January 23.

It is reported that the Berwick Automobile Car Co., of Hastings, Mich., will be reorganized. Several Grand Rapids men will take large blocks of stock, and the officers of the company will be Grand Rapids people. F. D. Eddy is secretary of the company.

Albert R. Shattuck, C. H. Gillette, Emerson Reeves, A. H. Whitney and Julian A. Ripley took a prominent part in the informal talk on the operation of gasoline cars, which was the topic of discussion at last week's club night at the Automobile Club of America.

The Pope Mfg. Co., of Hartford, Conn., welcomes 1904 with its long established and widely familiar daily desk calendar. While the cover links automobile with bicycle, 365 of the daily pages are devoted as of old to specially written sentiments about bicycling.

H. C. Porter, of Chicago, has gone to Washington, D. C., where he will endeavor to break his own world's endurance run record in an electric automobile. He established the record two years ago when an automobile driven by a battery of his invention ran 187 miles on one charge.

The Covert Motor Vehicle Co., successors to B. V. Covert & Co., Lockport, N. Y., has recently incorporated with a capital stock of \$100,000, and will manufacture the Covert chainless car next year. The officers of the new company are: William C. Barry, president; George C. Gordon, vice-president; B. V. Covert, manager; William C. Barry, Jr., secretary and treasurer.

The Automobile Club, of Pasadena, Cal., will enter the tournament of roses parade on New Year's day. Exhibitions of the control of automobiles, stopping at signal and avoiding ob-

MELANGE

stacles to show the ease of management and operation as compared with horse-drawn vehicles, will be given. Tracy C. Drake has recently been elected secretary of the club, to succeed R. H. Gaylord.

Side-slipping trials will be held next spring by the Automobile Club of Great Britain and Ireland, and February 29 will be the last day of entry for the trials. Three prizes, amounting to \$1,000, will be offered, the first of which will be not less than \$500. Those devices which pass this trial satisfactorily will then be submitted to a wear and tear test over a course not less than 500 miles in length.

The University of Pennsylvania Automobile Club has invited Yale, Harvard, Princeton, Cornell and Columbia to participate in a series of automobile races for the intercollegiate championship. The races will be held either in Philadelphia or at Atlantic City, N. J. An effort will be made this winter to form an intercollegiate automobile association and rules to govern the sport in the colleges will be formulated.

The Induction Coil Co., of Milwaukee, Wis., has issued a circular for repair men, dealers in supplies, agents and all others interested in ignition equipments for automobiles. The circular gives information which will enable the retail man to make changes in ignition equipments and also assist them in selecting coils to work in connection with the Motsinger Auto-Sparker and the Apple igniting dynamo. The company also supplies a line of intensifiers.

The December issue of the White Bulletin, issued by the White Sewing Machine Co., of Cleveland, O., is devoted to the performance of the White steam cars in the endurance run. The experience of the drivers, Webb Jay and Paul H. Deming, are related by themselves and the experiences of the pilot car driven by Windsor T. White, and the free lance driven by Augustus Post, are also related. The book may be obtained free of charge by addressing the company.

Frederick H. Elliott, of Syracuse, is in receipt of a letter from James Webster, of Sao Felix, Brazil, who states that he wants a steam omnibus which will carry twenty to thirty passengers with their luggage. Mr. Webster says he has the contract with the Brazilian government for twenty-five years to run road locomotives over a large area of the country from different stations of the Central Bahia Railway, of which he has been superintendent for over 20 years. He has also been superintendent of locomotives for 28 years.

The first Oldsmobile was made in 1887 and this vehicle is claimed to be the first in America to be run by a gasoline motor. It was a tricycle with wood wheels and steel tires and weighed about 1,300 pounds. It was equipped with a single-cylinder motor, 3-inch bore by 6-inch stroke, with hot tube ignition. The gear was a variable ratchet transmission. Various improvements have been made from year to year and today there are over 20,000 Oldsmobiles in use. The latest additions to the Olds line are the delivery wagon and the railway inspection car.

AMERICAN MOTOR LEAGUE OFFICIAL BULLETIN

ISAAC B. POTTER, Pres., Potter Bldg., New York
CHAS. E. DURYEA, 1st Vice-Pres., Reading, Pa.
W. GRANT MURRAY, 2d Vice-Pres., Adrian, Mich.

—: OFFICERS:—

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FREDERICK B. HILL, Treas., 32 Binford St., Boston

CHAIRMAN OF NATIONAL COMMITTEES:

LEGISLATION.....	George R. Bidwell, New York, N. Y.	MEMBERSHIP	Frank A. Egan, New York, N. Y.
ROAD IMPROVEMENT	R. E. Olds, Lansing, Mich.	SIGN BOARDS.....	John B. Price, Hazleton, Pa.
LOCAL ORGANIZATION.....	Charles F. Potter, Denver, Colo.	RACING	A. G. Batchelder, New York, N. Y.
TOURING	W. H. Baker, Buffalo, N. Y.	PRESS	Joseph Estoclet, Philadelphia, Pa.
TECHNICS	Charles E. Duryea, Reading, Pa.	HOTELS	Francis N. Bain, Newburg, N. Y.

NATIONAL HEADQUARTERS, 150 NASSAU STREET, NEW YORK

NATIONAL ASSEMBLY

The national assembly of the league will meet at Madison Square Garden, New York, January 19 to 22, 1904—the week of the automobile show. Every member of the league is invited to be present and every automobilist and automobiling organization in the United States is invited to unite with the league in the proceedings of good roads' day—January 19—and in later consideration of questions affecting the interests of automobilists generally. Good speakers are expected to be present and the annual meeting will be made as interesting and useful as possible.

ROUTES TO ST. LOUIS

Best information is needed respecting the routes from important towns in Iowa, Kentucky, Michigan, Minnesota, Wisconsin, Tennessee, Kansas, Colorado and Missouri—all leading through to St. Louis. Much of this information has been compiled, but it needs to be checked and verified, and the work of putting together fragmentary items is being patiently undertaken by the touring committee. Every reader who can send reliable information or contribute a reliable map to aid the work of the committee is requested to write to the secretary.

TO ALL AUTOMOBILE CLUBS

During the last five months the secretary has received many letters from officers of clubs complaining that the terms exacted by the league from clubs which might otherwise become league clubs, seemed unreasonable and burdensome, being urged that whatever benefits are to be derived by the club from its coalition with the national body will be only a fair offset to the benefits which the club yields back to the league through local work and local representation. The rule formerly in force required league clubs to pay into the national treasury the sum of two dollars for each member on the club roll. The officers of the league have discussed this question to a conclusion, and it has been decided to remove all pecuniary requirements and to admit any club to the status of a league club, subject only to the following conditions:

1. Each organization desiring to become a league club need only adopt a resolution to that effect and communicate the same to the secretary of the league.

2. Each league club shall elect one representative to the state board of officers of the state in which the club is located and also one delegate to the national assembly of the A. M. L.

3. It is not required that all members of a league club shall be members of the A. M. L. and the question of joining the league shall be left with each club member to decide for himself.

4. It is obviously proper, however, and is therefore required, that a delegate or representative sent by the club to attend a league meeting shall himself be a member of the A. M. L.

5. All matters of interest to the club which shall call for the co-operation of the national body will have due attention, and all local questions affecting the interests of the American Motor League will be taken care of by the club.

6. In matters of routes and tours the league will be at liberty to call upon the club for local information, and will in turn supply information respecting tours in other localities to officers and members of the club whenever such information shall be asked for.

THE AMERICAN MOTOR LEAGUE

is an organization to promote the interests of all users of motor vehicles; to ascertain, protect and defend their rights; to oppose and prevent the enactment of unreasonable and oppressive laws; to encourage the use of motor vehicles by agitation and instruction; to provide its members with printed routes, maps and guide books by which touring may be facilitated and encouraged; to promote the work of improving the public roads and the erection of proper guide boards, and other signs necessary to guide and warn the users of motor vehicles; to select and appoint official hotels, repair shops and supply stations where its members may obtain reliable service at reasonable rates.

WHO MAY BECOME A MEMBER

"Any man or woman, 18 years of age or over, of good moral character and respectable standing, friendly to the motor vehicle and its interests, shall be eligible to membership."

(Constitution, Article 2, Section 1.)

The League is extending its membership in all parts of the country. We invite all friends of the movement to join and aid in building up a powerful organization.

NO INITIATION FEE. ANNUAL DUES \$2 IN ADVANCE, OR \$3, INCLUDING 1 YEAR'S SUBSCRIPTION TO MOTOR AGE.

7. In all cases where individual members of the American Motor League the league will remit to the club one-third of the annual dues for each member so joining, and the same sum for each member paying a renewal fee. The club will thus receive from the league the sum of 66 2-3 cents annually for each of its members whose name remains on the A. M. L. roll. A like sum will be paid by the league to the state division in which the club is located, the remaining third being retained by the league for the work of the national body.

8. A nominal fee, not exceeding \$10 in any year, may be paid by the club toward defraying the necessary expenses of the conventions, state and national, in which the club takes part; but this payment is optional. It is suggested as

an equitable arrangement, subject to the approval of the several clubs.

The arrangement thus outlined removes entirely the pecuniary objection and opens the door to any and all clubs in good standing a ready means of uniting with the league in the extension of its work. The league is growing very rapidly and its individual memberships are incomparably greater in number than those of any other automobile organization in the country. The league is now taking up the work of local organization and will at once encourage the formation of a board of consuls in every important city and town where it is not already represented by a consulate or club.

REDUCED RAILROAD FARE

League members attending the automobile shows at New York and Chicago will have the advantage, if coming from a distance, of a reduced railroad fare granted by the big railroad associations to all who attend the national assemblies of the league which are set down to be held in the two cities named during the same weeks that are scheduled for the big shows. The rate of fare will be for the round trip equal to one and a third single fares and a very substantial saving will thus be insured. Full particulars may be had by mail.

APPOINTMENT

Dr. Henry Chandler, of Baltimore, has been appointed a member of the national touring committee. Dr. Chandler's high personal and professional repute are too well known to require mention, and it need only be said that his habit of exact and conscientious work and his love of touring will add much to the valuable compilations which the national committee is aiming to put together.

NEW YORK SHOW

All members of the league who intend visiting the automobile show at New York during the week of January 16 to 23, 1904, will find it to their advantage, pecuniary and otherwise, to inform the secretary as soon as possible of their intention to make this trip. This refers to all members who reside at a distance of 50 miles or more from New York.

OLD WORLD NOTES

The Motor Cycle Club of Belgium will arrange an excursion at the time of the Gordon Bennett race.

The Automobile Club of Marseilles, France, is arranging a 500 meters hill climbing contest for motor cycles and automobiles to take place March 6.

The Panhard & Levassor Company will erect a new factory near Paris, the present location being found too small. The new factory will be one of the largest in the world.

F. I. A. T.

FABRICA

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ITALIANA

A

AUTOMOBILI

T

TORINO

AUTOMOBILES
and
AUTO SPEED
LAUNCHES

Our Marine Motors are used on the submarine torpedo boats and warship tenders of the Italian Navy.



Silence Simplicity and Reliability



Our Automobiles are used by the Postal and Customs Departments of Italy, Spain and Portugal.

*"The
Machine
with
a
Brain"*

**PRESSURE
ON THE
FOOT PEDAL
CONTROLS
EVERY
FUNCTION
OF
THE MOTOR**

AWARDS:

Treviso, 1899, Gold Medal.
Turin, 1900. Ministry of Industry and Commerce Gold Medal. Italian Automobile Club Gold Medal.
Asti, 1900. Ministry of Industry and Commerce Gold Medal. "Gazzetta dello Sports" Gold Medal.
Asti, 1900. Gold Medal of the Exhibition. First Prize in the Speed Contests, etc.
Padua, 1900. Ministry of Industry and Commerce Great Gold Medal. Exhibition Gold Medal.
Padua, 1900. First Prize in the Speed Contests.
Brescia, 1900. Gold Medal Prize Cup. First Prize in the Speed Contests.

Turin, 1901. First Prize in the (Fuel) Consumption Contests.
Milan, 1901. First Prize at the International Automobiles Exhibition. Prize Cup given by H. M. the King of Italy.
Milan, 1901. Great Gold Medal.
Leghorn, 1901. First Prize in the Speed Contests.
Turin, 1902. First Prize for Hill-climbing Tests from Sassi to Superga. Cup presented by the Duke of the Abruzzi.
Turin, 1902. First Prizes in the Hill-climbing Tests between Susa and Mont Conis. First Challenge Cup presented by Prince Amedeo.

Turin, 1902. Great National Cup.
Turin, 1902. Diploma of Honour at the International Automobiles Exhibition.
Lisbon, 1902. First Prize at the Race between Figueira and Lisbon.
Padua, 1902. First Prize at the Speed Test.
Conegliano, 1902. First Prize at the Race with Alcohol Motors and for (Fuel) Consumption.
Florence, 1903. First Prize 70 H. P. Panhard. Second, Third and Fourth Prizes, 24 H. P. F. I. A. T. 15 Kil. Hill-climb.
Circle d'Ardennes, 1903. Third Prize. 24 H. P. F. I. A. T.

HOLLANDER & TANGE MAN

Sole American Agents

1904

5 W. 45th Street, New York



The
Oldsmobile
Wins



First Prizes in English Reliability Runs

The highest awards in Class A, in the big English Event captured by the favorite American Runabout.

The Oldsmobile, in open competition with all the other standard light motor cars of the world, carried off first and second prizes, gold and silver medals, in the recent English Reliability runs. The competition extended over eight days—on three of which it rained heavily. Tests including eight days non-stop runs averaging from 100 to 150 miles a day, hill-climbing tests, noise tests, dust-raising and brake tests, and other points not noticed in American competitions.

No other machine in the same class received awards.

In the recent American endurance contest, the Oldsmobile received first-class certificates, three machines finishing the run in spite of the heavy weather and floods.

The records made by the Oldsmobile in open contest are duplicated in every-day service by the 20,000 Oldsmobiles in use in every part of the world. For complete information about the Oldsmobile, see our nearest agent, or write

Olds Motor Works

1300 Jefferson Ave.

DETROIT, MICH.

Members of the Association
of Licensed Automobile Manufacturers



The **DOMINANCE** of
DETACHABLE DOUBLE TUBE TIRES

IS A

Triumph of the G & J Principle



Many others were tried, but the G & J clincher idea alone proved practical; hence its almost universal adoption.

YOU ALL KNOW WHY

or should know, even if you do not.

The G & J tire combines speed with comfort, and safety with both—and it also offers the greatest facility for repair, which, since the very first pneumatic tire, has been a vital and far-reaching consideration.

**INSIST ON HAVING YOUR CAR EQUIPPED
WITH G & J'S AND ADD TO YOUR PLEASURE.**

G & J TIRE COMPANY, Indianapolis, Ind.

New York Show, Space No. 147. Chicago Show, Spaces Nos. 153 and 154.

NOTICE

USERS, AGENTS, IMPORTERS, DEALERS AND
MANUFACTURERS OF

Gasoline Automobiles

United States Letters Patent No. 549,160, granted to George B. Selden, November 5, 1895, controls broadly all gasoline automobiles which are accepted as commercially practical. Licenses under this patent have been secured from the owners by the following named:—

MANUFACTURERS

Electric Vehicle Co.	Pope Motor Car Co.
The Winton Motor Carriage Co.	The J. Stevens Arms & Tool Co.
Packard Motor Car Co.	H. H. Franklin Mfg. Co.
Olds Motor Works	Charron, Girardot & Voigt Co. of
Knox Automobile Co.	America (Smith & Mabley)
The Haynes-Apperson Co.	The Commercial Motor Co.
The Autocar Co.	Berg Automobile Co.
The George N. Pierce Co.	Cadillac Automobile Co.
Apperson Bros. Automobile Co.	Northern Mfg. Co.
Searchmont Automobile Co.	Pope-Robinson Co.
Locomobile Co. of America	The Kirk Mfg. Co.
The Peerless Motor Car Co.	Elmore Mfg. Co.
U. S. Long Distance Automobile Co.	E. R. Thomas Motor Co.
Waltham Manufacturing Co.	Buffalo Gasoline Motor Co.
	The F. B. Stearns Co.

IMPORTERS

having licenses for the importation of all makes of foreign cars:

Charron, Girardot & Voigt Co. of	Standard Automobile Co.
America (Smith & Mabley)	E. B. Gallaher
Central Automobile Co.	

These manufacturers are pioneers in this industry and have commercialized the gasoline vehicle by many years of development and at great cost. They are the owners of upwards of four hundred United States Patents, covering many of the most important improvements and details of manufacture. Both the basic Selden patent and all other patents owned as aforesaid will be enforced against all infringers.

No other manufacturers or importers than the above are authorized to make or sell gasoline automobiles, and any person making, selling or using such machines made or sold by any unlicensed manufacturer will be liable to prosecution for infringement.

A suit was commenced on Oct. 22d against a dealer, and against a manufacturer infringing United States Letters Patent No. 549,160.

A suit was commenced Nov. 5th, against a purchaser and user of an automobile infringing the same patent.

Association of Licensed Automobile Mfrs.
No. 7 EAST 42d STREET, NEW YORK

The Peculiar Excellence of
Construction of
American Dunlop Tires

**Automo-
biles
Carriages**



**Motor-
bicycles
Bicycles**

has made them the choice of discriminating buyers the world over. Every detail has been worked out to the highest degree. Everything that enters into the tire is of selected material and subjected to the closest scrutiny in every process of manufacture, with the result that American Dunlop Tires have made a name of their own that is synonymous with tire perfection. Every wide-awake merchant in any land can profit himself and satisfy his customers by handling

AMERICAN DUNLOPS

Manufactured by

Hartford Rubber Works Company

Hartford, Connecticut, U. S. A.



Perfection is a strong word to use in defining any man-made product, but ask a motorist his opinion of his

PEERLESS DIRECT DRIVE MOTOR CAR

Our new 24 and 35 h. p., four-cylinder cars—\$3,700 to \$6,000—embody the highest perfection of motor vehicle construction. Send for description.

Our Exhibit at the Show will Speak for Itself.

Agencies in the Principal Cities.

Photogravure of "Peerless Girl II." shown herewith, suitable for framing, 14x22 inches, sent postpaid on receipt of ten cents.

The PEERLESS MOTOR CAR COMPANY, Cleveland, O., U. S. A.
Member Association Licensed Automobile Manufacturers

Our Chicago-New York Record Run and the New York-Pittsburg Endurance Run
Clearly Demonstrated the Superiority of

Columbia Gasoline Cars

We now wish to emphasize the fact that something happens every now and then
to demonstrate the superiority of

Columbia Electric Vehicles

For instance: October 27-28, 1903, a COLUMBIA Electric covered the distance of 249½ miles between New York City and Boston in 22 hours and 52 minutes, running time, beating the best previous record by hours.

Again: November 26, 1903, a COLUMBIA won the hill-climbing contest for electric vehicles at Eagle Rock, Orange, N. J., beating its nearest competitor up the mile grade by more than a minute.

Catalogue of 20 different Columbia Electric and Gasoline Automobiles
will be sent on request.

ELECTRIC VEHICLE CO., - Hartford, Conn.

New York Branch: 134-136-138 West 39th St.

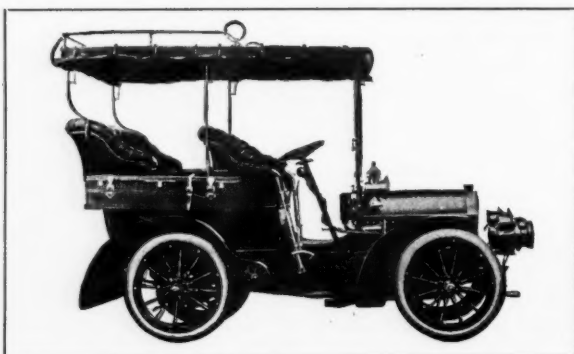
Chicago Branch: 1413 Michigan Ave.

Boston Branch: 74-76-78 Stanhope St.

Member Licensed Association of Automobile Manufacturers.

Locomobile | Gasoline Touring Cars

A
TRUE
SIMPLEX



EASILY
THE BEST BUILT
CAR
IN AMERICA

A New Four-Cylinder Touring Car with Cellular Radiator

We are taking many orders for our 1904 Gasoline Cars. Be sure and get YOUR order in early.
Preliminary folder now ready.

The Locomobile Company of America, BRIDGEPORT, CONN.

MEMBERS OF THE ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS.

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PHILADELPHIA: 249 N. Broad St.

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The Advance of The Ford

All the *best* things in this world are usually worth even more than the price you pay for them. A *cheap* automobile is dear at any price, but a car like the Ford is a bargain at any reasonable figure.

The advanced and improved construction, the higher grade of materials used in building the machinery and body, and the addition of heavy 3-inch detachable tires to its equipment compel us to make the price of the 1904 Ford

\$900 with Tonneau \$800 as a Runabout
Lamps, Horn and Brass Trimmings Extra

We agree to assume all responsibility in any action the Trust may take regarding alleged infringement of the Selden Patent to prevent you from buying the Ford—"THE CAR OF SATISFACTION."

Mr. Ford made the first automobile in Detroit, and the third in the United States. The FORD MOTOR CAR of today represents the most advanced type of automobile construction.

Write for full information and illustrated Catalogue to

FORD MOTOR CO., Detroit, Michigan

"IMPERIAL" Gasoline Automobiles

DOUBLE OPPOSED
AIR-COOLED MOTOR

ARE ALWAYS READY
THE HOTTEST DAYS OF SUMMER
THE COLDEST DAYS OF WINTER

BEVEL GEAR DRIVE
SLIDING GEAR TRANSMISSION

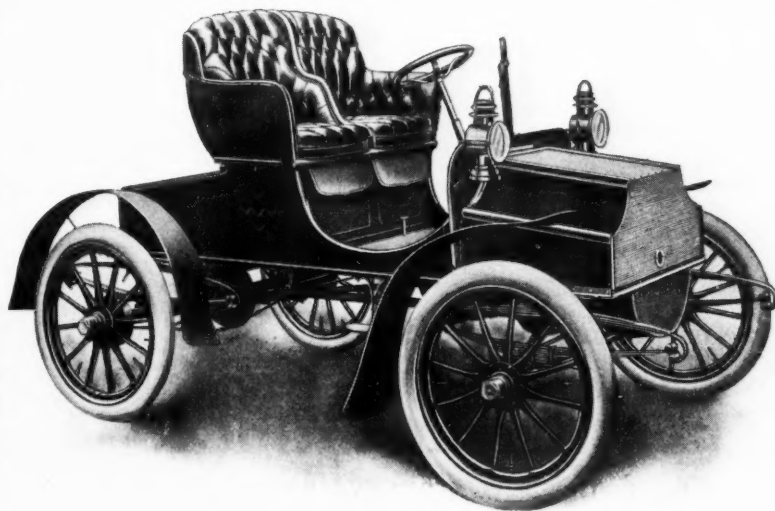
WE MANUFACTURE 4 DIFFERENT MODELS

- Model A. Open Runabout
- Model B. Runabout Furnished with Falling Top or Doctor's Top
- Model C. Delivery Wagon
- Model D. Full Glass Doctor's Car

All of which we will have on exhibition at the Fourth Annual Automobile Show in New York and the Third Annual Automobile Show in Chicago.

HAS ALL THE LATEST IMPROVEMENTS

Our "IMPERIAL" Automobiles are driven by double opposed air-cooled engines (no water, no radiator coils, no pump), placed in front, away from all dirt and dust. All parts accessible by simply lifting the hood. Has bevel gear drive instead of sprocket chain. Sliding gear transmission. Two brakes. Automatic spark timer. Forced feed oiler of large capacity. Tilting steering wheel. Our spring suspension we claim is the most practical and best ever shown on any automobile. Body of handsome design, roomy and comfortable, and with ample room back of seat for carrying a number of parcels. Upholstered in the finest quality of leather.



IMPERIAL MODEL "A"

AGENTS WANTED IN UNOCCUPIED TERRITORY
BOOKLET ON APPLICATION

RODGERS & CO., COLUMBUS, OHIO, U. S. A.

1904 MODELS ARE NOW READY FOR SHIPMENT....

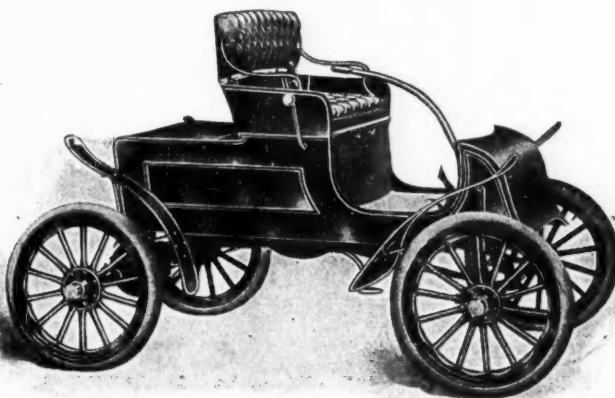
Five years ahead
of the times.

No "Kick" possible
from motor.

No Vibration.

No Noise.

Backed up by
twelve years of
practical experience
in motor
construction.

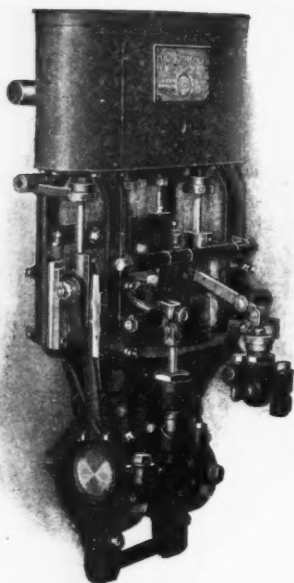


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The "NEW MASON"

(Model "C")

includes all of the many excellencies of the original Mason Engine, with additional features, which give it a still greater lead ahead of all other steam auto engines.

Every part of the Mason Engine has been critically gone over, and wherever possible, improved, strengthened and perfected in every smallest detail.

THE "NEW MASON" Model C

than any other concern, and have concentrated in the "Model C" all of the experience gained by this wide observation of all other engines. We do not claim that

The Mason "Model C" is a perfect engine, but do positively affirm, and are ready to back up our affirmation, that it is, from every standpoint,

THE BEST AUTO ENGINE IN THE WORLD.

Our "Model C" catalogue will tell you all about this engine, and prove interesting to every autoist. It will be a pleasure to mail you a copy. Send postal card for it to-day.

A full line of parts for all Mason Engines will be found at 147 Queen Victoria St., London, England.

THE MASON REGULATOR COMPANY, - - 158 Summer Street, BOSTON, MASS.

Kindly mention this publication in writing.

The Locomobile Steam Car

If you want a

RELIABLE RUNABOUT

get a Locomobile Steam Car. Ease of control and quietness are advantages not to be overlooked.



The Locomobile is the best automobile

IF YOU LIVE

in a hilly country and want a run-about, why not get a Locomobile? It's the only automobile that ever climbed Pike's Peak.

LONG WHEEL BASE RUNABOUT

125 Miles on Gasoline . . . A Very Desirable Car

Write for full information about the Steam Cars we manufacture

The Locomobile Company of America, Bridgeport, Conn.

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List of Branch Offices:

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BRIDGEPORT: Factory at Seaside Park.
BOSTON: 13 Berkeley St.

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Spaces 57-58 at New York Auto Show (Main Platform)
Spaces 159-160 at Chicago Auto Show.

Diamond Tires

FOR 1904.

The tires whose records of results in the most severe tests and in daily service under both normal and abnormal conditions *have convinced men of the widest experience that Our 1904 Construction is not, and never has been equaled.*

The tires whose excellence cannot but be an important factor in the forward march of automobile building and using in general.

The tires whose *proved economy should be a matter of direct, personal interest to every owner or prospective purchaser of an automobile.*

The tires which made the famous record of *5 1-2 mills per mile in the endurance run.*

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Broad St.
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THE DIAMOND RUBBER CO.

AKRON, OHIO.

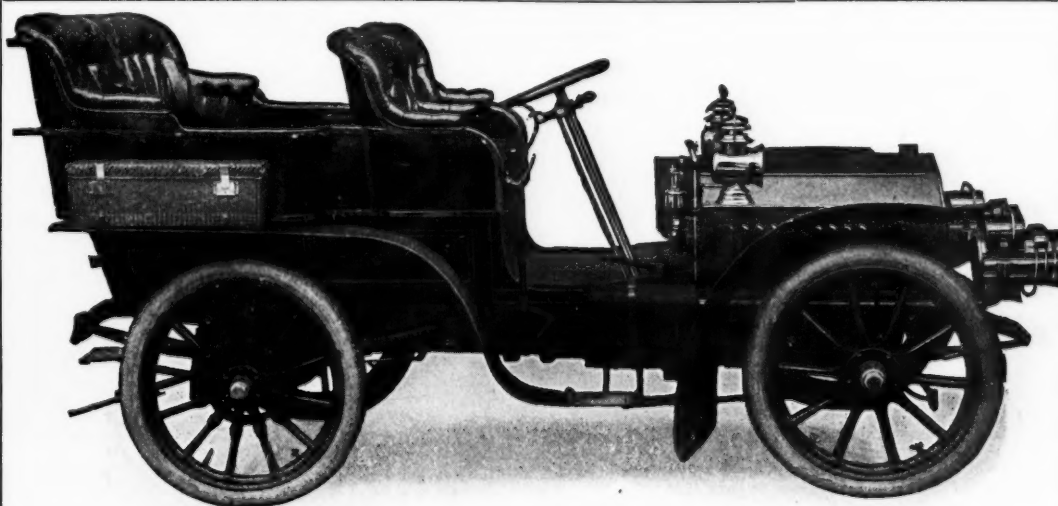
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CLEVELAND, 323 Huron St.
CINCINNATI, 2103 South St.
CHICAGO, 167-169 Lake St.
DENVER, 1655 Blake St.
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DARRACQ CARS

Hold More Records than any Other Make in the World

Oldfield
Defeated by
DARRACQ CAR
at Detroit and
Philadelphia

See Our
New 24 H. P.
1904 Model



24 H. P. Four Cylinder Touring Car

WINNER
OF
58
SILVER CUPS

Our New Touring Cars are the Acme of Perfection

AMERICAN DARRACQ AUTOMOBILE COMPANY

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THE LIGHTEST
THE STRONGEST
MOST DURABLE
MOST EFFICIENT
BEST FINISHED



ABSOLUTELY SAFE
PERFECTLY CLEAN
BEST TO RIDE
MOST ECONOMICAL
TO KEEP

THE BAKER ELECTRIC

Attractive in Rich Finish and Design. ✱ Simply Manipulated. ✱ Always Satisfactory.
A Carriage Any Lady Can Drive.

SEND FOR OUR B K CATALOG.

THE BAKER MOTOR VEHICLE CO., Cleveland, Ohio

"CREST AGENCIES CIRCLE THE GLOBE."

It will pay you to look up the merits of this popular car before placing your orders for 1904. The Crestmobile has more desirable features than can be found in any automobile manufactured, no matter what the price

\$750 FOR TWO PERSONS

A CAR built by manufacturers with years of experience in the Gas Engine business. The Crestmobile is an honest proposition from the ground up. The workmanship, finish and material is the best that money can buy. It has the size, appearance, power, durability and speed of expensive touring cars costing four times the price. Those are a few reasons why the Crest is the car for you

WRITE FOR CATALOGUE. DEPT. K.

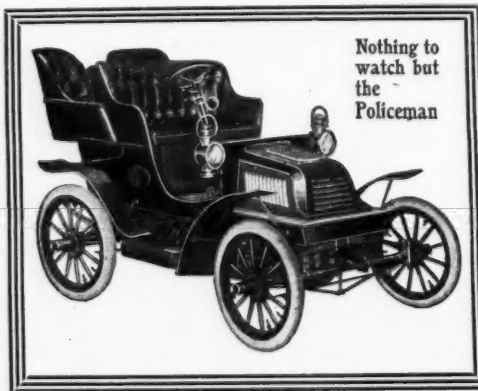
"THE CREST IS THE CAR FOR YOU."

We have retained many of our 1903 features with the following improvements: A much larger and more powerful motor—fan cooled, wider body, larger tonneau, option of 45 or 54 in. tread, lever or wheel steer, any color

\$850 FOR FOUR PERSONS

The vast amount of money spent in worthless experiments and the many complicated parts which go to make up the traditional type of automobile is spent in perfecting the smaller number of parts constituting the Crestmobile. The 1904 Crest is the simplest automobile made. No water supply to watch, no water pipes and jackets to freeze. Shaft drive. No chains to break or regulate

Nothing to watch but the Policeman



1904 CRESTMOBILE

CREST MAN'FG CO., CAMBRIDGE, MASS

Hand in Hand With Tire Satisfaction

Good tires are of no advantage unless backed up with good rims. They're as inseparable as the Siamese twins, if it's safety and durability you want.

Standard Rims

are tire helpers. They have established a reputation for durability, accuracy and general excellence that has resulted in their adoption by the leading automobile builders in the country. Every Standard Rim bears the Tire Makers' Official Inspection Stamp, which protects you in your tire guarantee. Get them—you get the best.

THE STANDARD WELDING CO.,
CLEVELAND, OHIO.

LACKAWANNA

IS SYNONYMOUS WITH

QUALITY in MOTORS

Single Chain Drive Transmission.

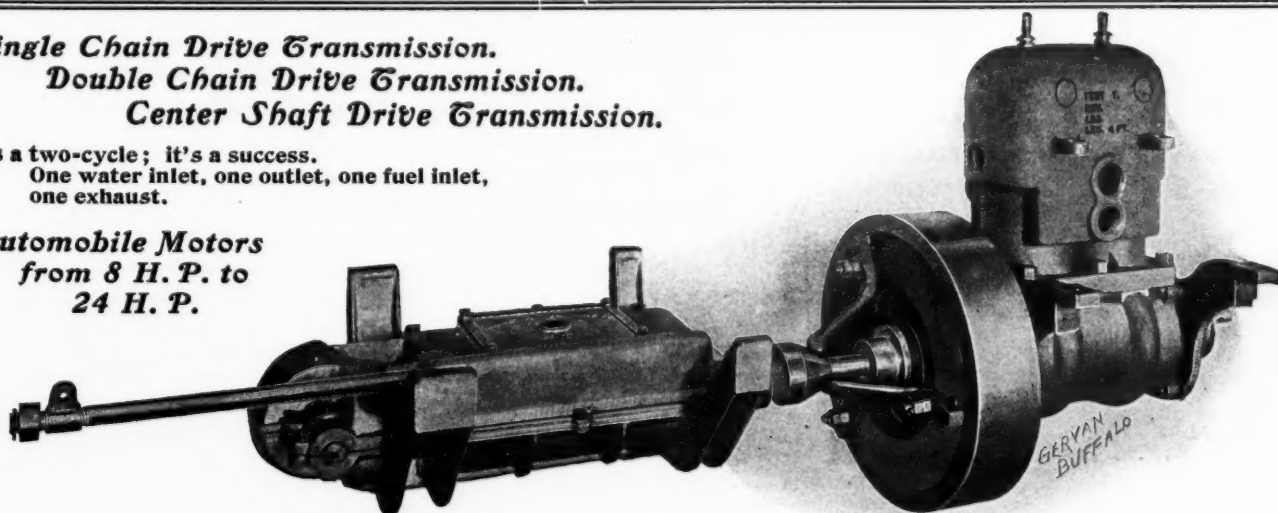
Double Chain Drive Transmission.

Center Shaft Drive Transmission.

It's a two-cycle; it's a success.

*One water inlet, one outlet, one fuel inlet,
one exhaust.*

*Automobile Motors
from 8 H. P. to
24 H. P.*

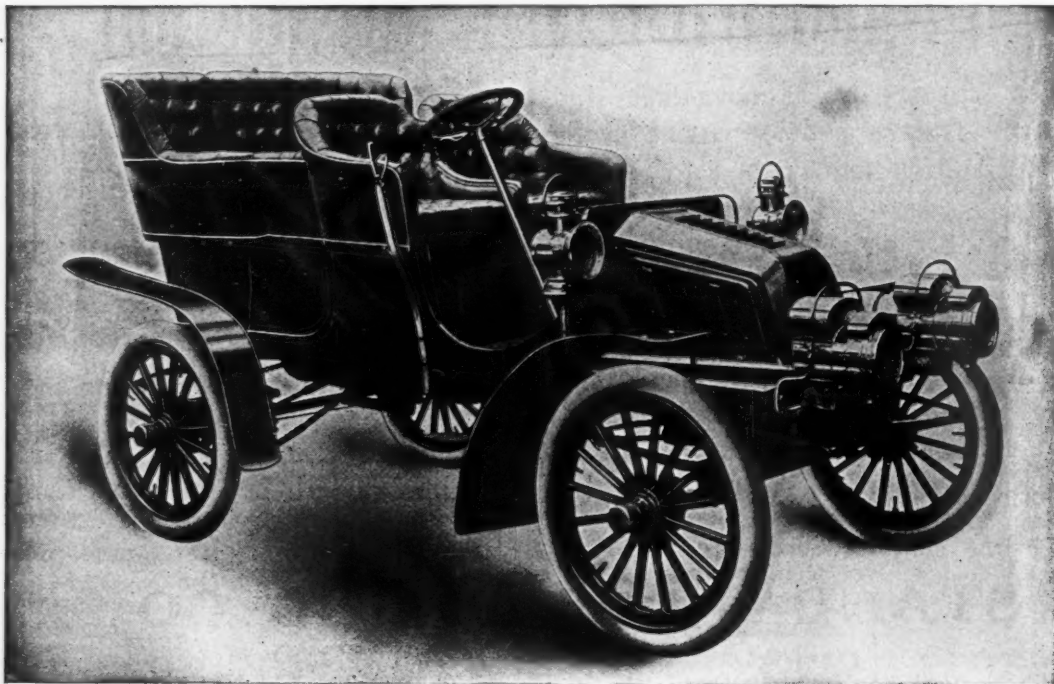


Single Chain Drive Transmission and Clutch Coupled to Motor

For Prices and Points of Merit, Address

LACKAWANNA MOTOR CO., 50 Letchworth Street, Buffalo, N. Y.

Both Fredonias Came Through



PRICE, \$1,250.00

the greatest flood in the history of New York State and finished

The Endurance Run

at Pittsburg on time and without loss of efficiency points.

Both the Fredonia Tonneau No. 2 and the 9-horsepower Runabout are stayers in any kind of use.

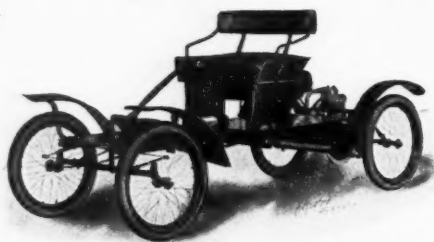
Our run demonstrated this beyond peradventure of a doubt.

FREDONIA MANUFACTURING CO., Youngstown, Ohio, U.S.A.

Chicago Agent: Edmond F. Dodge, of P. G. Dodge & Co., 2116 Lumber Street.
EXHIBITED AT 1303 MICHIGAN AVENUE

THE BUCKBOARD WINS

second prize at Eagle Rock Hill Climbing Contest. Beating stripped cars in the one thousand pound class. The little Buckboard has proved itself a winner everywhere this season, both on road and track, and the fact that it defeats large cars of three times its horsepower and six times its price only goes to prove the wonderful efficiency embodied in this unique machine.



Model of 1904. Price \$425
With Two Speed

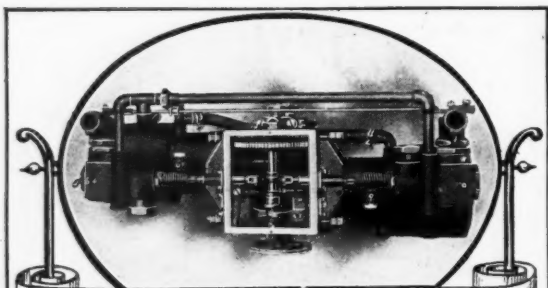
We do not pretend to forecast the future, but we have a presentiment that those who are lucky enough to get the agency for the Buckboard for 1904 will have reason to shake hands with themselves before the season is over.

Agents' terms will be sent to regular dealers only.

WRITE FOR ADVANCE CIRCULAR

WALTHAM MFG. CO., Waltham, Mass.

Members of the Association of Licensed Automobile Manufacturers.



"STEVENS-DURYEA"

"Much in Little,"

would be an apt characterization of the motor of the

"STEVENS-DURYEA"

Gasoline Automobile. The two cylinder, seven horse-power motor of this popular pleasure vehicle, embodies practical utility to the highest degree attainable.

Both in its external appearance and in the detailed mechanism of its driving power, the noted machine that "starts from the seat" is distinctly individual.

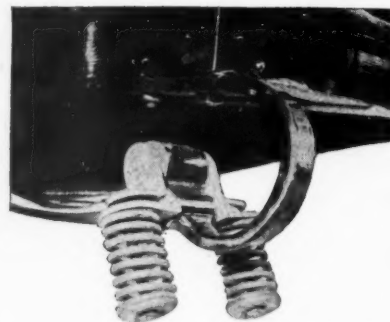
Price of automobile, at factory, including complete equipment, \$1,300. Send for illustrated catalog; it should be in the hands of every patron of automobiling.

J. Stevens Arms & Tool Co.

705 Main Street, Chicopee Falls, Mass.

Member Association Licensed Automobile Manufacturers.

Would You? Would I?



Oakland, Cal., 27th Oct., 1903.

The Graham Co.,
Park Sq. Auto Station,
Boston, Mass.

Dear Sirs: I notice your "ad" of the GRAHAM Supplementary Spiral Springs, and as I am tired of paying for broken leaf springs for my touring car I will try your springs which you will ship to me by Wells-Fargo, C.O.D., with full instructions to apply the same.

Yours truly,

This is the regular thing by every mail.

WOULD I?

THE GRAHAM CO.

41 Columbus Ave., BOSTON, MASS., U. S. A.

Have You Read the

WHITE BULLETIN

FOR DECEMBER?

It contains spirited narratives by Webb Jay and Paul Deming, of how the White Steam Touring Cars won

Two Gold Medals

in the recent Endurance Run. The pamphlet is well illustrated and contains best map of the New York-Cleveland-Pittsburg-Philadelphia-New York touring route ever published.

WRITE FOR ONE.

THE WHITE STEAM TOURING CAR
THE WHITE SEWING MACHINE COMPANY
CLEVELAND-OHIO

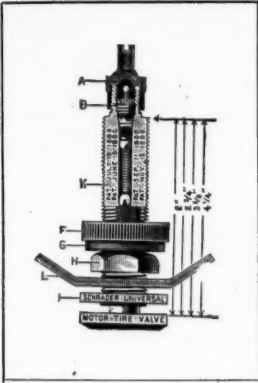
DIETZ

Lucifer
Gas
Lamp



★
As simple to use
and operate as
an oil lamp. Send
for circular about
it and our new
styles of
OIL LAMPS

★
R.E. Dietz Co.
37 Lighthouse St.
New York - N. Y.
ESTABLISHED 1840



Schrader Universal Valve

TRADEMARK REGISTERED APRIL.

Simple and Absolutely Air Tight

Motor Tire Valves, as shown in cut, are made in four lengths as shown. Cut is exactly half size of the 2-inch valve. Supplied to the trade by all Tire Manufacturers.

—o MANUFACTURED BY o—

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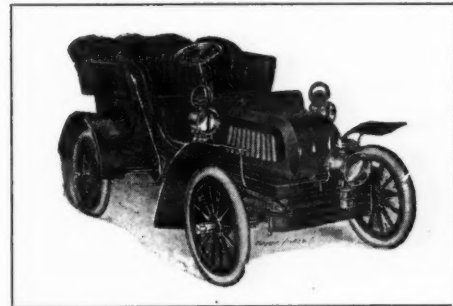
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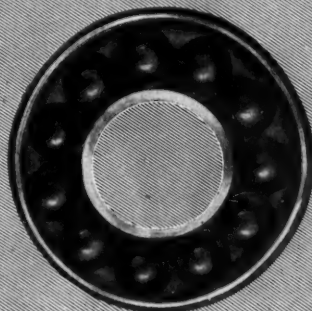
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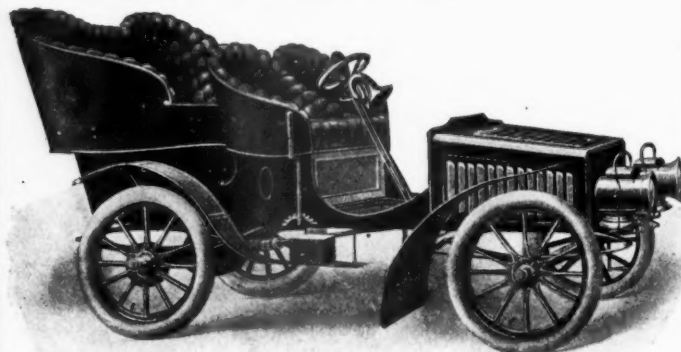
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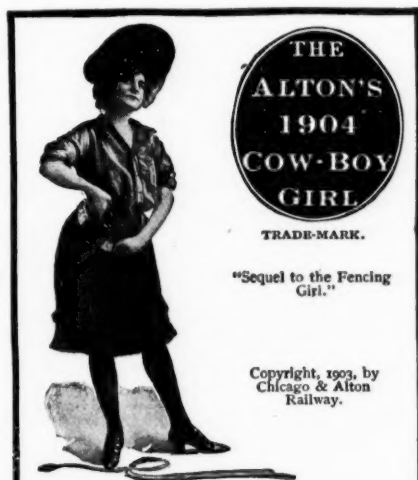
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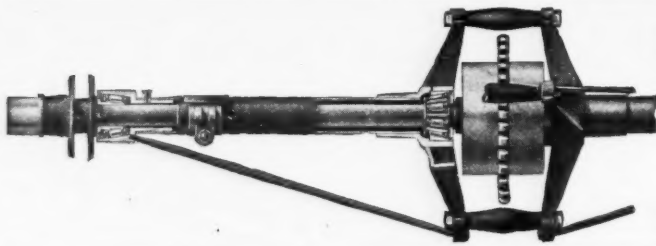
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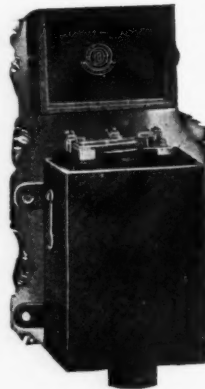
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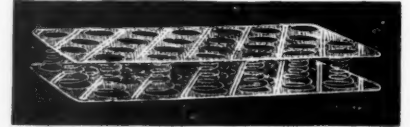
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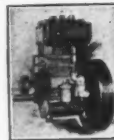
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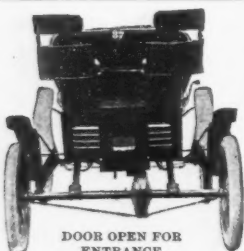
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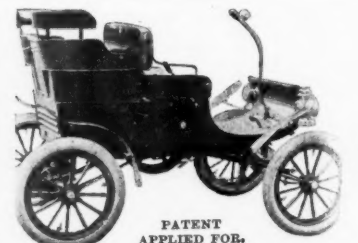


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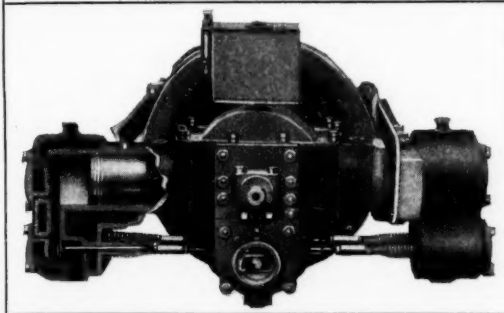
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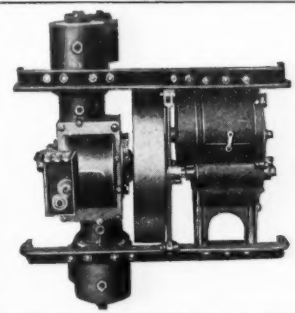
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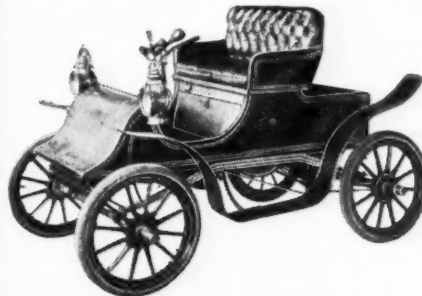
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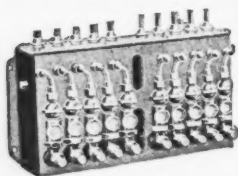
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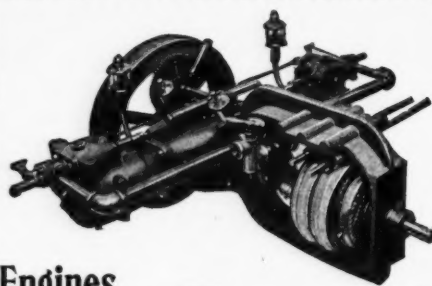
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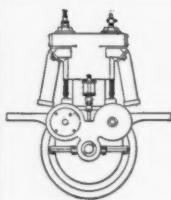
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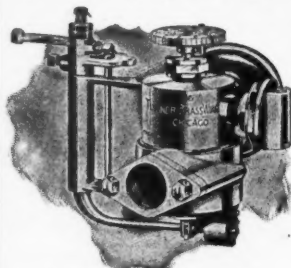
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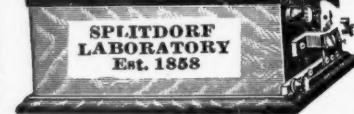
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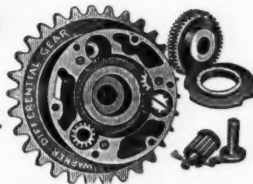
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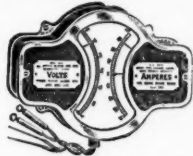
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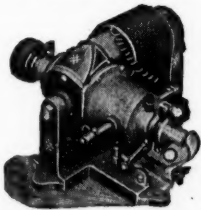


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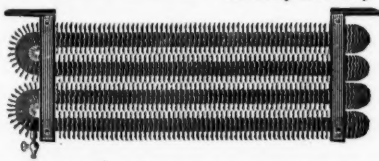
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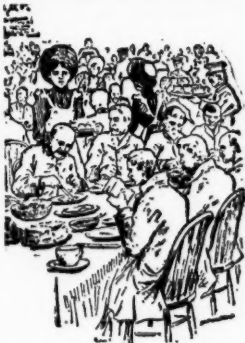


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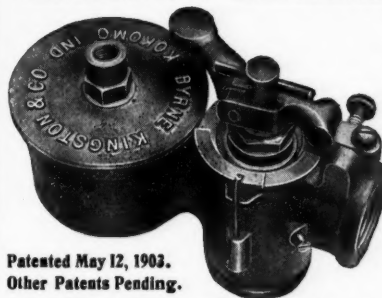
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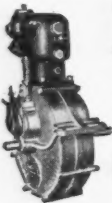
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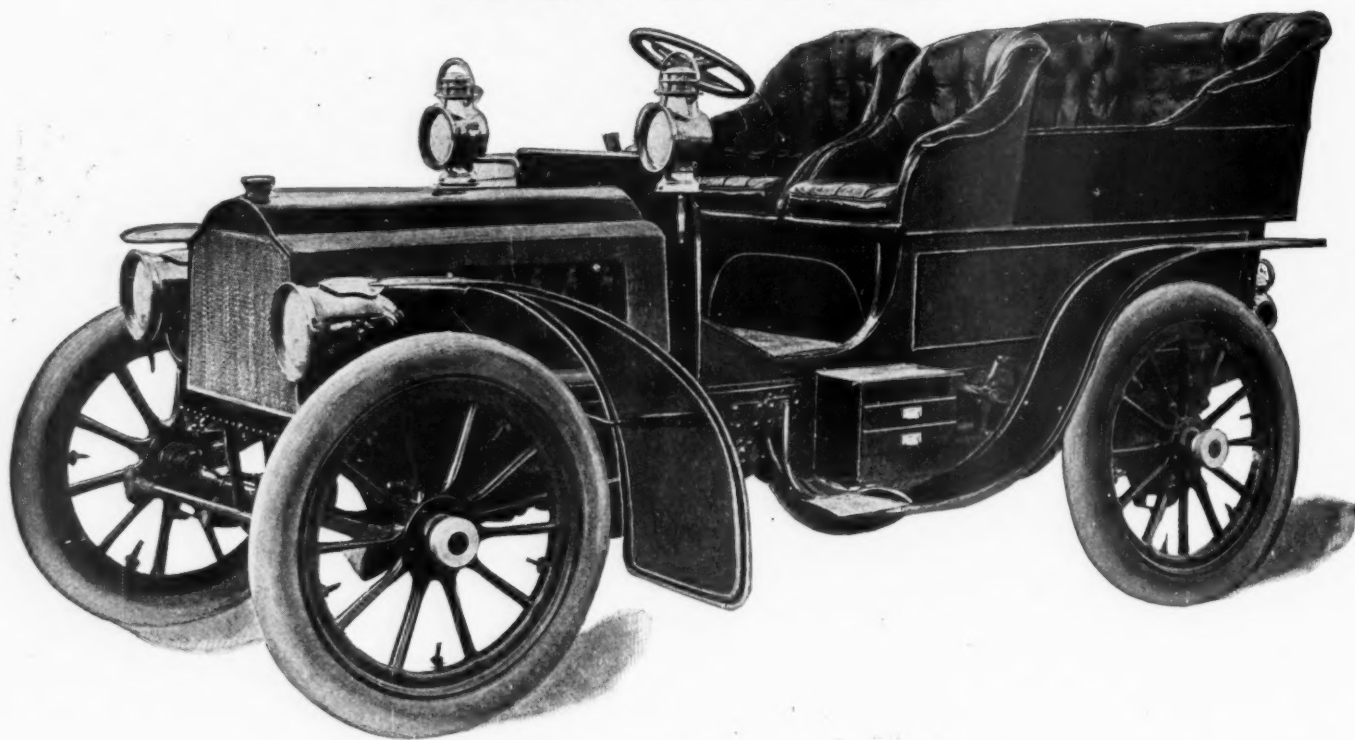
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